City of Bryan Safety Procedures
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Effective Date: 07/01/99
Revision Date: 01/08/09

GENERAL SAFETY RESPONSIBILITIES

This manual contains safety guidelines, policies and procedures aimed at minimizing loss due to preventable accidents. The City of Bryan's goal is to create a safe work environment by identifying and eliminating safety hazards in the workplace and establishing safety-related responsibilities at each operational level of the organization. To achieve this goal, City staff shall constantly review and, if necessary, modify the safety standards contained herein. In addition, all City staff shall continuously be trained in (and made aware of) safety issues and procedures pertaining to their particular work environment.

The City of Bryan believes that it is possible to virtually eliminate major causes of accidents with a continued emphasis on operational procedures, employee discipline and safe working conditions. A well-trained and well-supervised employee in a safe environment is unlikely to have an accident.

SAFETY MEETINGS

Safety meetings are an opportunity to discuss policies, hazards or review accidents. They are often used to determine a consistent approach to minimizing hazards or accidents. The following are some basic guidelines on safety meetings:

1. The City Safety Officer, in conjunction with safety coordinators, shall coordinate safety meetings in all departments. Supervisors will encourage and allow all employees an opportunity to attend safety meetings. Supervisors are responsible for an employee's safety meeting attendance.
2. Frequency of meetings will be established based on the seriousness and frequency of hazards. Hazards specific to a department's tasks will be emphasized whenever possible.
3. The minimum number of safety meetings for any group will be once per quarter.
4. Division safety meetings are generally held once a month and cover pre-defined topics.
5. Tailgate safety meetings are generally shorter and are held at the job site or before the start of the work day.
6. Safety meetings may be combined with other activities to maximize use of time and resources.

RESPONSIBILITIES

Department Heads

Each Department Head has full authority and responsibility for maintaining safe and healthy working conditions in their operations. The philosophy of the National Safety Council is based on following these three basic premises. Each environment should start with the first item on the list and only move down the list if the desired results are not achieved.

- Engineer out the hazards
- Modify work procedures, increase training, increase awareness
- Issue and train with personal protective equipment

The following safety practices will help managers achieve those safe and healthy working conditions:

1. Provide loss control policies to employees and ensure consistent compliance with policies and procedures.
2. Consider safety features when planning for construction, remodeling of facilities or purchasing of equipment.
3. Promote a free discussion of hazardous work problems. Encourage surveys of work areas and inspection of equipment to evaluate the safety of the work environment.
4. Verify prompt corrective action is taken wherever hazards are recognized or unsafe acts are observed.
5. Ensure employees are trained in the proper way hazardous jobs must be done.
6. Require use of personal protective equipment where needed.
7. Promptly report, investigate and record all accidents and implement corrective actions to prevent recurrence of similar accidents.
8. Encourage safety suggestions from employees and implement those that are feasible.
9. Review recommendations of safety committees and implement those that are feasible.
10. Appoint division safety coordinators; giving consideration to the individual's interest and attitude concerning accident prevention.
11. Use the ability to perform work assignments safely in consideration of the selection, promotion and evaluation of employees.

Supervisory Personnel

It is the responsibility of the supervisor to maintain safe and healthy working conditions in their operations. As part of front line operations, the supervisor is responsible for these safety practices:

1. Ensure all safety policies are implemented.
2. Promote safety awareness and encourage a proper attitude by good example.
3. Be accountable for preventable injuries and accidents of employees. Inform management so that all accidents of a serious nature can be investigated.
4. Recommend correction of deficiencies noted in equipment, facilities, work procedures, employee job knowledge and attitudes to the department head.
5. Train and instruct employees on safe methods to perform the job. Document such training appropriately.
6. Assure necessary protective equipment is provided and properly used. Instruct employees in the capabilities of personal protective equipment and the purpose of other safety equipment.
7. Review all injuries and accidents with employees at formal or tailgate safety meetings. Outline the hazards and actions that contributed to the accident to minimize the likelihood of a future incident.

8. Ensure employees attend safety education and training programs.
9. Ensure only authorized, licensed personnel operate City vehicles. Authorized personnel should be familiar with State and City driving regulations.
10. Periodically observe special purpose vehicles/equipment operators and ride with drivers of City vehicles to check for compliance with operating instructions and traffic regulations. Take immediate corrective action when unsafe driving practices are observed at any time.
11. Instruct drivers and operators in preventive maintenance, ensuring inspections are performed and unsafe vehicles are not driven until safety discrepancies have been corrected.
12. Cooperate with the Risk Manager, Safety Officer or insurance representative in discontinuing operations considered to be an imminent danger.
13. When working conditions do not allow immediate control of all hazards, give instructions regarding hazardous conditions to all employees working in that area until conditions can be corrected. Unsafe equipment should be marked or flagged out-of-service.

Employees

Ignorance of safety practices, policies and procedures will not be accepted as an excuse for neglect or unsafe practices in the performance of the job. The safety practices listed below are the minimum for employees and shall in no way be understood to limit more comprehensive procedures.

1. Comply with all City of Bryan policies, procedures, regulations, posted warnings, job training and departmental operating procedures.
2. Report accidents and injuries, regardless of how minor, to their supervisor immediately.
3. Abide by all laws and rules governing the movement of traffic, speed and parking.
4. Report all unsafe equipment and conditions or unsafe acts, to their supervisor immediately. Inform or relay information regarding unsafe conditions to all employees working in the area until it can be corrected. Unsafe items should be marked or flagged.
5. Comply with directions of the supervisor unless reasonable precautions have not been taken to protect the employee from harm.
6. If an employee does not abide by the City or department policies or violates safety rules, the employee may be disciplined, up to and including termination.

Effective Date: 03/12/10
Revision Date: 00/00/00

ELECTRICAL SAFETY

Introduction

The purpose of this policy is to establish safe work practices that are intended to prevent electric shock or other injuries resulting from either direct or indirect electrical contacts when work is performed near or on equipment or circuits which are or may be energized. Because of the diversity in job assignments throughout the city, employees are at varying levels of potential exposure to energized components of electrical systems.

Scope

This policy applies to all electrical installations, as well as to work performed on or near electrical equipment and/or distribution systems. Since electrical equipment is present within most city work areas, this policy encompasses a large number of work locations. This policy applies to everyone performing work for the city including, but not limited to; Full-time regular, part-time regular and temporary/seasonal employees, subcontractors, vendors, etc.

Definitions/Abbreviations

NEC	National Electric Code
NEMA	National Electric Manufacturer's Association
GFCI	A ground fault circuit interrupter (GFCI) is an electrical device which protects personnel by detecting potentially hazardous ground faults and quickly disconnecting power from the circuit. A change in current flow of 5-8 milliamps (mA) is indicative of shock conditions and will cause the device to disconnect.
Lockout/Tagout	To ensure the safety of personnel, electrical power must be removed when electrical equipment is inspected, serviced, or repaired. Lockout is the process of removing the source of power and installing a lock which prevents the power from being turned on. Tagout is the process of placing a danger tag on the source of electrical power which indicates that the equipment may not be operated until the danger tag is removed.
NFPA 70E	National Fire Protection Association's "70E Standard for Electrical Safety Requirements for Employee Workplaces"

General Responsibilities

Responsibilities of manager's, supervisors, employees and contractors are all specified in the General Safety Policy. Specific responsibilities are outlined as follows.

- Ensure employees comply with ALL provisions of the electrical safety program and the NEC.
- Ensure employees receive training appropriate to their assigned electrical tasks.

Training

Employees that work on or near energized wires or devices must receive training in avoiding electrical hazards. This training may be in the form of classroom and/or on the job instruction but must be provided before the employee is allowed to work around electrical hazards.

Each employee must be able to:

- Demonstrate a working knowledge of the NEC.
- Use Lockout/Tagout procedures including safe work practices required to safely de-energize electrical equipment.
- Understand universal electrical safety procedures.
- Demonstrate skills and techniques necessary to distinguish exposed live parts from other parts of electrical equipment.
- Participate in on-the-job training with a qualified electrical worker.
- Demonstrate skills and techniques necessary to determine the nominal voltage of exposed live parts.
- Select and use proper work practices, personal protective equipment, tools, insulating and shielding materials and equipment for working on or near energized parts.

General Electrical Safety Rules, Practices and Procedures

- Before work begins at a job site, locate electrical lines (below and above ground) and take precautions to prevent accidental contact.
- Know the safe way to handle anything that carries or is powered by electrical current, and only use electrically powered equipment that you are trained and qualified to operate.
- Locate and use all electrical lockout devices and tags properly.

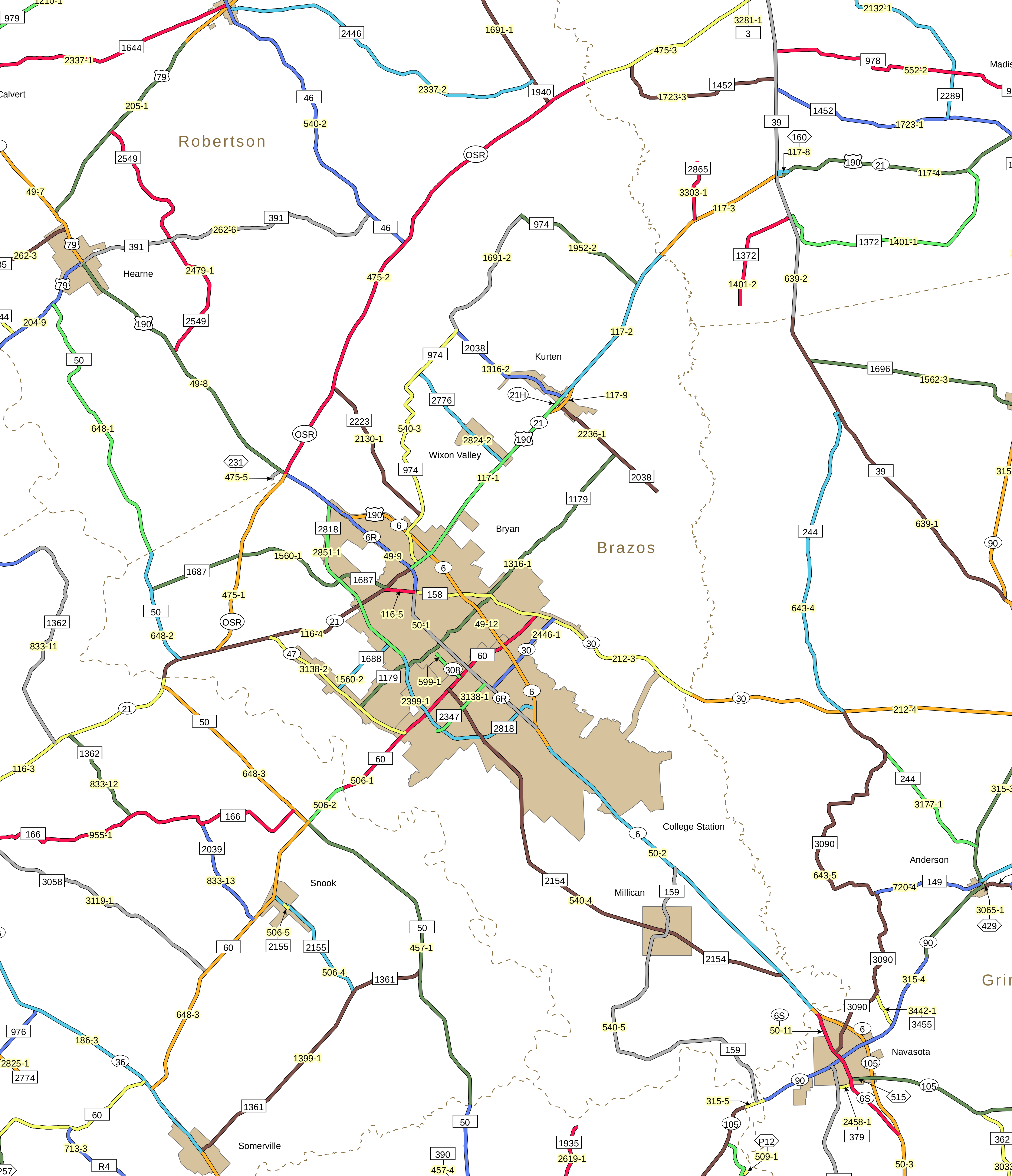
- Live parts to which an employee may be exposed must be de-energized before any employee works on or near them, unless de-energizing will introduce additional or increased hazards or is not feasible due to the equipment design or operational limitations.
- Use appropriate personal protective equipment & insulated tools consistent with the hazard.
- For adequate protection, a (GFCI) should be used to protect employees in wet, damp or outside locations when using extension cords or electrical equipment.
- Only use properly rated (NEMA) equipment in wet or hazardous environments.
- Inspect all electrical tools, equipment, extension cords etc. on a regular basis.
- All electrical equipment shall be properly grounded.
- Electric repairs shall be made only by a licensed electrician or a qualified repair person.

Personal Protection

- Employees working in areas where there are potential electrical hazards will use appropriate electrical protective equipment and properly rated non-conductive tools.
- Electrically rated rubber gloves must be tested before issue and every six months thereafter. Specific testing criteria for gloves and other rubber products are listed in 29CFR 1910.137(b).
- Designated areas must have eye and face protection available for protection against arc or flash burns.
- Insulated boots must meet the EH rating of ANSI Z41 PT99 or equivalent.
- Hard hats must be non-conductive up to 20,000 volts and comply with ANSI Z89.1-2009 or equivalent.
- Cotton clothing or clothing meeting NFPA 70E standards for the appropriate arc thermal performance value must be worn when working near exposed energized conductors or circuit parts.

Housekeeping

Housekeeping must be monitored closely by the supervisor. A five foot clearance around electrical equipment such as circuit-breaker panel disconnects and fixed power tools should be kept free from stored items, debris, and any liquids or material that could create slippery floors or obstruct access to the equipment for maintenance or emergencies. Greater clearance distances may be required depending on the NEC. Employees should be observant and report conditions that could cause electrical shock hazards.


Robertson
Brazos
Calvert
Hearne
Kurten
Wixon Valley
Bryan
College Station
Millican
Snook
Somerville
Navasota
Anderson
Madis
Grir

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INSTRUCTIONS for TxDOT PERMIT APPLICATIONS

There are two types of TxDOT Permit forms 1082 and 1058, below is what each one covers:

FORM 1058

- ***Permit to Construct Access Driveway Facilities on Highway Right of Way*** - used when constructing any drive onto a TxDOT Highway, driveway closures, sidewalks in the right-of-way and detention pipes.

FORM 1082*(new form replaces old 1082 and 1023 forms)*

- ***Utility Installation Request*** - used when installation of all utility lines within the TxDOT right-of-way. *(e.g. water, sewer lines, etc.)*

The following are steps necessary to obtain a TxDOT Permit:

1. Complete the appropriate form (Form 1082 – Rev. 11/2006 or Form 1058 - Rev. 9/2004) & secure the owner's signature.
2. Each application form should be accompanied by:

a. Drawings showing the plan and profile of the work to be performed within the ROW. For access drives, include the proposed grading of the site.

b. B/CS Unified Standard Details and TxDOT Details when applicable.

c. The appropriate Traffic Control Plan in conformance with the Texas Manual on Uniform Traffic Control Devices for Streets and Highways. We have attached some examples of typical plans.

3. Submit five (5) copies of the ***entire*** Application Packet to City of Bryan, Engineering Services Division.
4. Upon review and approval by Engineering Services, the City will deliver the permit application to TxDOT for approval. (TxDOT's review will take approximately 2 weeks to process.)
5. A copy of the Approved Permit will be returned to the Developer/Engineer.

The Developer is responsible for overseeing that the Contractor carries out the following:

- Have a Copy of the Approved Permit at the Construction Site;
- Adhere to any Conditions submitted for approval and/or indicated as a Special Provision by TxDOT;
- Notify the Engineering Inspector @ 209-5030, at least 48 hours prior to commencement of work;
- Use the appropriate Traffic Signing as reflected on the Traffic Control Plan.

If you have any questions, please feel free to call your Case Engineer at 209-5030.

Utility Installation Request

To theTexasTransportation Commission
c/o District Engineer
Texas Department of Transportation _____ , Texas

Date _____

Formal notice is hereby given that _____
proposes to place a _____
line within the right of way of _____ , RM _____ to RM _____ in _____ County
Texas, MNT Sec. No. _____ as follows: (give location, length, general design, etc. Use additional sheet as needed)

_____

_____

_____

We will construct and maintain the line on the highway right of way as shown on the attached drawing and in accordance with the rules, regulations and policies of the Texas Department of Transportation (TxDOT), and all governing laws, including, but not limited to, the "Texas Engineering Practice Act," "Federal Clean Water Act," the "National Endangered Species Act," "Americans with Disabilities Act," and the "Federal Historic Preservation Act." Upon request by TxDOT, we will submit to TxDOT proof of compliance with all governing laws, rules and regulations before commencement of construction. Plans shall include the design, proposed location, vertical elevations, and horizontal alignments of the facility based on the department's survey datum, the relationship to existing highway facilities and the right of way line, traffic safety and access procedures, and location of existing utilities that may be affected by the proposed utility facility. The location and description of the proposed line and appurtenances is more fully shown by a complete set of drawings attached to this notice.

Our organization will use Best Management Practices to minimize erosion and sedimentation resulting from the proposed installation, and we will revegetate the project area as indicated under "Revegetation Special Provisions."

Our organization will ensure that traffic control measures complying with applicable portions of the *Texas Manual on Uniform Traffic Control Devices* will be installed and maintained for the duration of this installation.

When installing our utility on controlled access facilities, we shall conform to the Texas Transportation Code, Title 6 Roadways, Chapter 203, Subchapter C, Control of Access, §203.031 (http://tlo2.tlc.state.tx.us/statutes/statutes.html.). We shall limit access for servicing this installation to access via (a) frontage roads where provided, (b) nearby or adjacent public roads or streets, (c) trails along or near the highway right of way lines, connecting only to an intersecting road; from any one or all of which entry may be made to the outer portion of the highway right of way for normal service and maintenance operations. Our rights of access to the through traffic roadways and ramps shall be subject to the same rules and regulations that apply to the general public.

It is expressly understood that TxDOT does not purport, hereby, to grant any right, claim, title or easement in or upon this highway; and it is further understood that TxDOT may require us to relocate this line, subject to the provisions of governing laws, by giving thirty (30) days written notice.

We will notify TxDOT prior to commencement of any routine or periodic maintenance which requires pruning of trees within the highway right of way, so that TxDOT may provide specifications for the extent and methods to govern in, but not limited to, trimming, topping, tree balance, type of cuts, painting cuts and clean up. We understand that these specifications are intended to preserve TxDOT's considerable investment in highway planting and beautification, by reducing damage due to trimming and to protect known endangered species.

Our installation shall not damage any part of the roadway structure or associated appurtenances and we will make adequate provisions to minimize inconveniences to the traveling public, and adjacent property owners. In the event we fail to comply with any or all of the requirements as set forth herein, the State may take such action as it deems appropriate to compel our compliance.

Following approval, we will begin construction on or after _____
Month/Day/Year

Additional Provisions and Requirements (for TxDOT input only)

- **General Special Provisions:**

☒ Are attached.
☐ Are not attached.

- **As-built Plans/Certifications of Construction:**

☐ Are required and shall be certified as accurate by an authorized representative of the company.
☐ Are required and shall be signed and sealed by a State of Texas Licensed Professional Engineer.
☐ Are not required
☒ Certification that utility was installed as approved

- **Re-vegetation Special Provisions:** In order to minimize erosion and sedimentation resulting from the proposed installation, the project area will be re-vegetated:

☒ in accordance with TxDOT's Standard Specification Item 164 which specifies the appropriate grass seed mix to be used, or:
☐ as indicated on the attachment.

TxDOT Representative to be notified 48 hours prior to beginning construction Mr. Walt Norwood @ 778-8054

If approved, we understand that we will assume all risks associated with this installation within the TXDOT right of way. These risks include, but are not limited to, injuries to our workers, damage to contiguous utility lines that may be in the area, injuries or damage resulting from our failure to properly install and maintain the line as shown on plans.

We understand TxDOT may place additional provisions and requirements as listed above, based upon, but not limited to, the type of utility being installed, local site conditions, soil types and traffic.

We acknowledge that this Utility Installation Request approval **expires** on the **91st** calendar day from the date of issuance, unless otherwise approved, if we do not begin our installation by this date. If we do not begin our installation within this time frame and still wish to continue, we will resubmit our request in accordance with the prevailing governing laws, rules, regulations and policies at the time of resubmission.

By signing as/for the requestor below, I certify that I am authorized to represent the requestor, that I agree to the provisions and requirements included in this Utility Installation Request, and our commencement of construction will further attest to our review and acceptance of said additional provisions and requirements.

REQUESTOR	**APPROVED BY TxDOT**
Date:	**Date:**
By:	**By:** Jay O. Page
Signature:	**Signature:**
Title:	**Title:** Associate Area Engineer
Address:	**Address:** 2102 Tabor Road
City **State** **Zip Code**	Bryan Texas 77803 **City** **State** **Zip Code**
( ) - **Area Code** **Telephone Number**	(979) 778- 6233 **Area Code** **Telephone Number**

Director of Maintenance Concurrence **Date**

Texas Department of Transportation

Form 1058
(Rev. 9/2004)
(GSD-EPC)
Page 1 of 2

Permit to Construct Access Driveway Facilities on Highway Right of Way

To: _____ Hwy. _____ Permit No. _____
(Name)

_____ Control _____ Section _____
(Address)

_____ _____
(City, State, Zip) (Phone No.)

The Texas Department of Transportation, hereinafter called the State, hereby authorizes _____ hereinafter called the Permittee, to ☐ construct / ☐ reconstruct a _____ (residential, convenience store, retail mall, farm, etc.) access driveway on the highway right of way abutting highway number _____ in _____ County, located _____

Subject to the following:

1. The Permittee is responsible for all costs associated with the construction of this access driveway.
2. Design of facilities shall be as follows and/or as shown on sketch and is subject to conditions stated below:

_____

_____

_____

All construction and materials shall be subject to inspection and approved by the State.

3. Maintenance of facilities constructed hereunder shall be the responsibility of the Permittee, and the State reserves the right to require any changes, maintenance or repairs as may be necessary to provide protection of life or property on or adjacent to the highway. Changes in design will be made only with approval of the State.
4. The Permittee shall hold harmless the State and its duly appointed agents and employees against any action for personal injury or property damage sustained by reason of the exercise of this permit.
5. Except for regulatory and guide signs at county roads and city streets, the Permittee shall not erect any sign on or extending over any portion of the highway right of way, and vehicle service fixtures such as fuel pumps, vendor stands, or tanks shall be located at least 12 feet from the right of way line to ensure that any vehicle services from these fixtures will be off the highway right of way.
6. The State reserves the right to require a new access driveway permit in the event of a land use change or change in driveway traffic volume or vehicle types.
7. This permit will become null and void if the above-referenced driveway facilities are not constructed within six (6) months from the issuance date of this permit.
8. The Permittee will contact the State's representative _____ telephone, (_____) _____ , at least twenty-four (24) hours prior to beginning the work authorized by this permit.

Texas Department of Transportation

_____ _____
Date of Issuance Authorized Representative

The undersigned hereby agrees to comply with the terms and conditions set forth in this permit for construction of an access driveway on the highway right of way.

_____
(Print Name)

Local Approval:
(City) _____ Signed: _____
(Property owner or owner's representative)

Date: _____ Date: _____

Access Driveway Regulations

The Texas Transportation Commission, in recognition of its responsibility for the safety and utility of public highways under its jurisdiction, has directed the department to adopt access driveway standards to accomplish a coordinated development between highways and abutting property. For this purpose, the booklet entitled "Regulations for Access Driveways to State Highways", was published and adopted, setting out departmental policies to regulate construction and maintenance of access driveway facilities.

Sketch of Installation

REQUEST FOR PROPOSED INSTALLATION IN COUNTY RIGHT-OF-WAY
TO THE COMMISSIONERS' COURT OF BRAZOS COUNTY, TEXAS
BRAZOS COUNTY ADMINISTRATION
BRYAN, TEXAS 77803

Formal notice is hereby given that (applicant) _____ proposes to place a (type) _____ within ___ across___ the right-of-way of (road)_____ in Brazos County, Texas as follows:

The location or description of the proposed installation is more fully shown by _3_ copies of the drawings attached to this notice.

I understand and agree that:

1. The County Engineer must be notified 72 hours prior to the beginning of construction in order that he, or his designated inspector, may inspect the actual installation;

2. All damage to the roadways and rights-of-way will be repaired to their original condition to the satisfaction of the County Engineer;

3. Brazos County reserves the right to require Applicant to relocate or lower any such line at no cost to Brazos County, should same become necessary due to widening or lowering, or other alteration of the roadway or right-of-way;

4. Brazos County will in no way be responsible for any damage which might occur to any existing utility lines in the right-of-way;

5. The line will be constructed and maintained on the County right-of-way in accordance with the Utility Accommodation Policy which was adopted by the Texas Department of Transportation on May 29, 1989;

6. The line or lines will be constructed no less than twenty-four inches (24") lower than the lowest part of the drainage or bar ditch and the drainage is to be considered at least two feet (2') below the center of the roadway;

7. All sites will be barricaded during the construction period.

Construction of this line will begin on or after the __ day of _____, 20___.

Firm: _____

By: _____

Title: _____

Address: _____

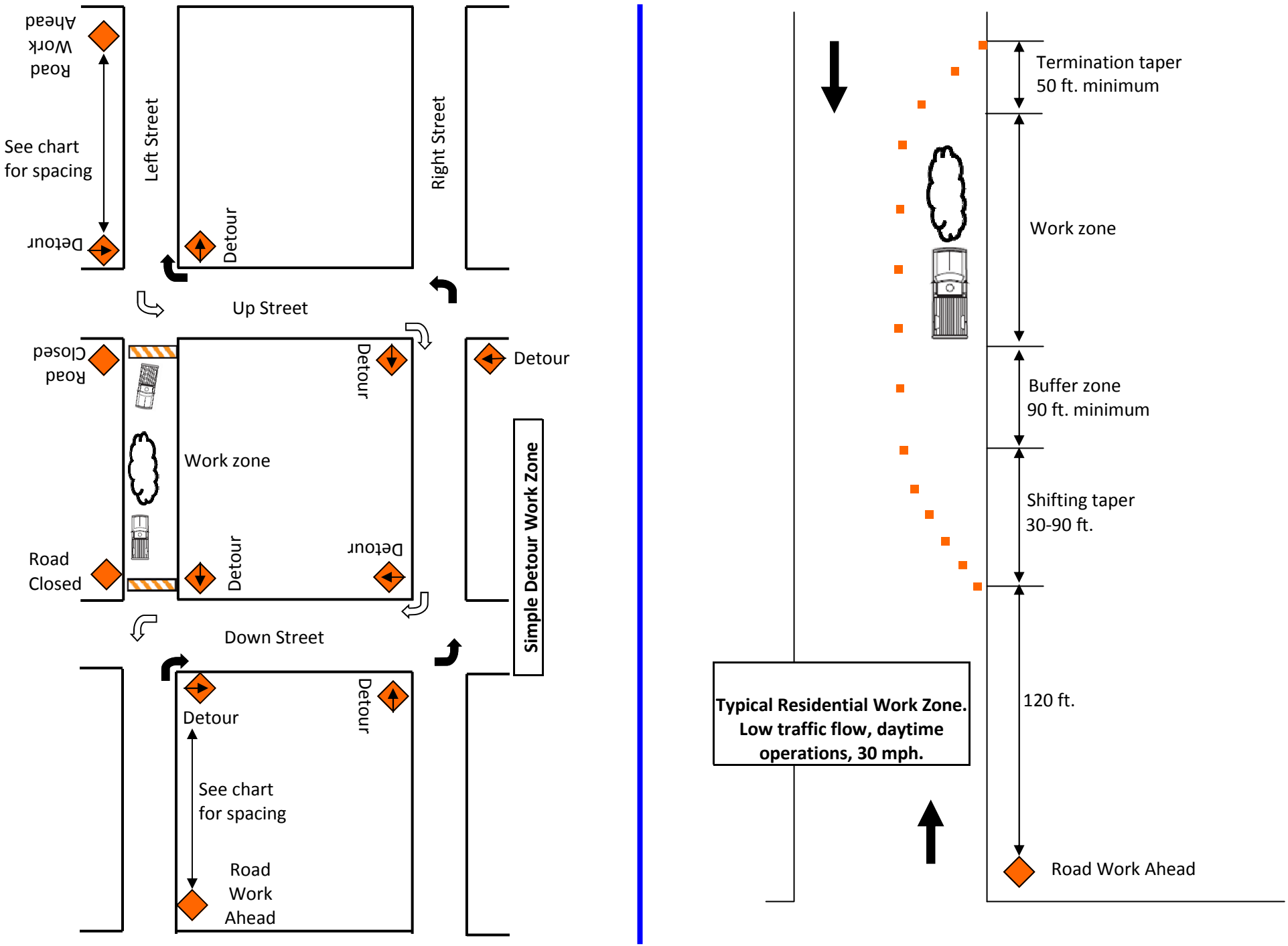
_____

Phone: _____

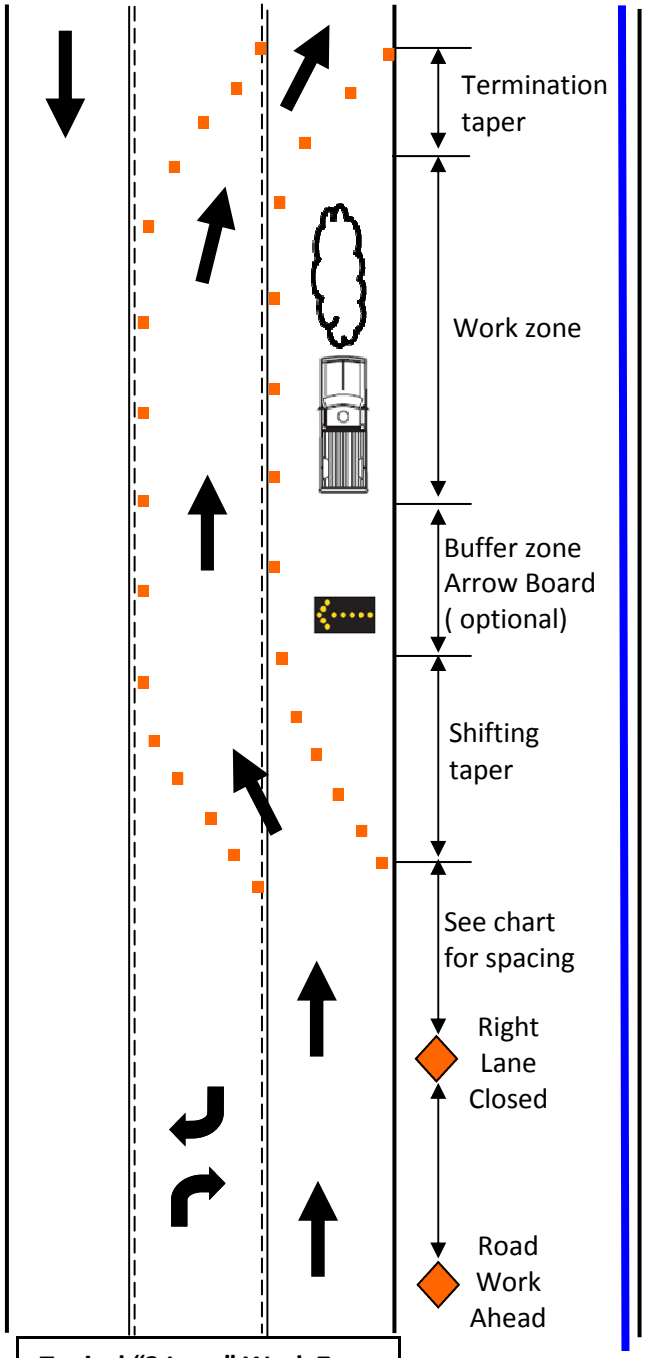
APPROVED BY COMMISSIONERS' COURT:

Date _____

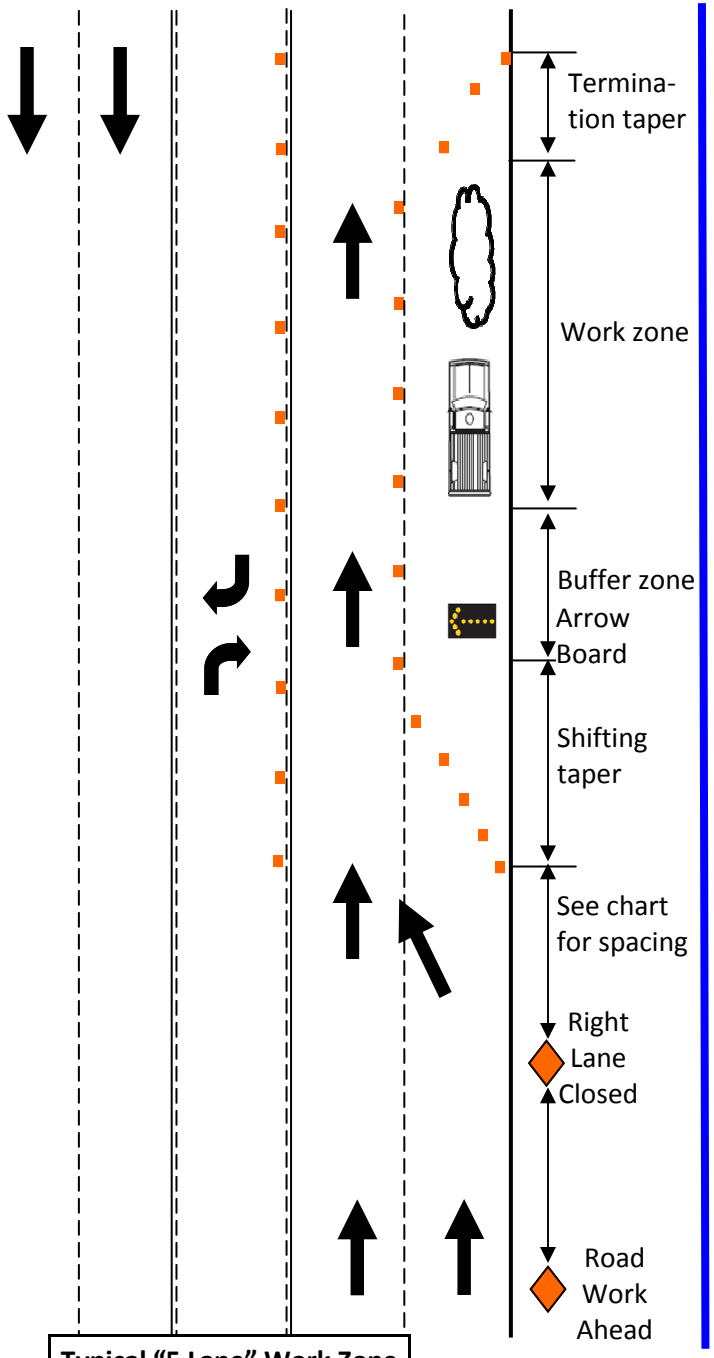
_____
Randy Sims, County Judge
Brazos County, Texas



WZTC Attachment F



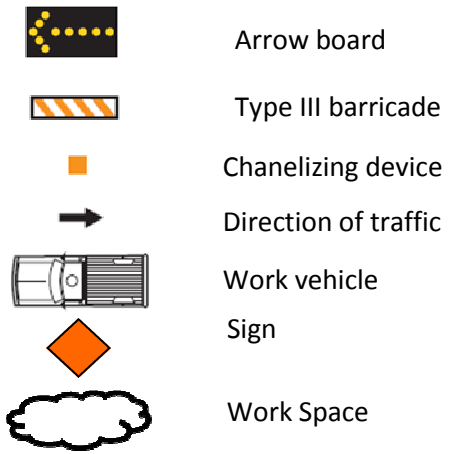
Typical "3 Lane" Work Zone



Typical "5 Lane" Work Zone

Termination Taper	100 feet per closed lane					
Posted Speed (MPH)	≤ 30	35	40	45	50	55
Cone Spacing (Feet)	30	35	40	45	50	55
Sign Spacing (Feet)	120	160	240	320	400	500
Shifting Taper (Feet)	85	115	150	250	275	305
Merging Taper (Feet)	165	225	295	495	550	605
Buffer Space (Feet)	90	120	155	195	240	295

For speeds greater than 55 MPH refer to the TMUTCD.



WZTC Attachment G

Effective Date: 12/10/10
Revision Date: 00/00/00

WORK ZONE TRAFFIC CONTROL

PROGRAM OVERVIEW

The City of Bryan is responsible for a multitude of infrastructures both in and outside the City limits. The installation and maintenance of those infrastructures often requires putting employees and contractors in roadways or right-of-ways. The objective of this policy is to provide maximum protection to the employees and the public while causing minimal interference to vehicular and pedestrian traffic.

When setting up temporary traffic control zone, always provide more protection than may appear necessary rather than under-protecting. Minimal protection may give a false impression of the extent of the temporary traffic control zone and not command the attention of the driver well enough to have them deviate from their normal route.

Crews equipped with the proper traffic control devices should be able to set up most temporary traffic control zones in less than fifteen (15) minutes. The decision to set up a temporary traffic control zone may not be made based upon the amount of time needed to set out the traffic control devices. Every job that will impede traffic movement must have appropriate safety measures in place before the repairs or maintenance are begun.

DEFINITIONS

Incident Area – An area of roadway where temporary traffic controls are imposed by authorized officials in response to a traffic incident, natural disaster or special event. It extends from the first warning device to the last TTC device or to a point where road users return to the original lane alignment and are clear of the incident.

Right of Way – (ROW) All publicly owned areas that a vehicle may travel upon intentionally or otherwise. In addition to the roadway, this includes adjacent driveways, sidewalks and drainage areas.

Temporary Traffic Control Zone – (TTC) An area of a roadway where road user conditions are changed because of a work zone or incident by the use of temporary traffic control devices, flaggers, uniformed law enforcement officers or other authorized personnel.

Texas Manual on Uniform Traffic Control Devices – (TMUTCD). The manual officially adopted by the Texas Legislature (Texas Administrative Code Rule §25.1) and the City of Bryan (Chapter 118-153 of the Code of Ordinances) that governs the standards and specifications for all

traffic control devices that are erected and maintained on any street, bikeway, public facility, or private property open to public travel within the State of Texas, including all local jurisdictions.

Traffic Control Plans – (TCP) A plan, either decided upon at the time of need; or designed, submitted to and approved by a registered professional engineer, for the placement of traffic control devices in a TTC.

Traffic Control Devices – (TCDs). Traffic control devices are any sign, signal, pavement marking/marker, barricade, channelizing device, or other piece of equipment erected and/or operated to provide regulation, warning, and guidance to a motorist. Purposes of traffic control devices, as well as the principles for their use, are to promote highway safety and efficiency by providing for the orderly movement of all road users on streets and highways. All traffic control devices should: fulfill a need; command attention; convey a clear, simple meaning; command respect from road users; and give adequate time for a proper response.

Work Zone – An area of a roadway with construction, maintenance or utility work activities. It is typically marked with signs, channelizing devices, barriers, pavement markings and/or work vehicles. It extends from the first warning sign or high-intensity rotating, flashing, oscillating or strobe lights on a vehicle to the END ROAD WORK sign or last TTC device.

RESPONSIBILITY AND AUTHORITY

The City of Bryan, as a public agency, is authorized to place traffic control devices, announcements, and other signs and messages for the purpose of regulating, warning or guiding traffic within the jurisdiction of the City of Bryan.

Contractors and public utility companies may, after being granted proper authority by the City of Bryan, install temporary traffic control devices in temporary traffic control zone. Such devices and their placement must conform to the standards of the TMUTCD.

No one standard sequence of signs or other traffic control devices can be set up as an inflexible arrangement for all situations due to the variety of conditions encountered. The TMUTCD establishes principles to be observed in the design, installation and maintenance of traffic control devices. It also serves as a guide for setting up traffic control plans (TCP) in a variety of common situations. It is the responsibility of the Division Managers to ensure that every employee responsible for setting up a temporary traffic control zone has been trained in the principles of the MUTCD.

The City of Bryan has the ultimate responsibility to ensure the safety of their workers at all times, however, the Texas Department of Transportation and Brazos County have reserved the right to control activities on roadways that they maintain. Any time that work activities will interfere with the normal flow of traffic or pedestrians on a state or county-maintained roadway a traffic control plan must be approved in advance. **Attachment A** is a graphic of state-maintained

roadways within our jurisdiction. County jurisdiction is generally marked with signs indicating the transition between City and County maintenance.

The following attachments must be completed before working in these right-of-ways. Speak to your managers about submitting the applications since some managers have access to online submission programs.

Attachment B: TxDOT instructions

Attachment C: TxDOT Utility Permit

Attachment D: TxDOT Driveway Permit

Attachment E: Brazos County Traffic Permit

PROCEDURES

Road user movement should be inhibited as little as practical based on the following considerations:

- TTC at work and incident sites should be designed on the assumption that drivers will only reduce their speed if they clearly perceive a need to do so.
- Frequent and abrupt changes in geometry such as lane narrowing, dropped lanes, or main roadway transitions that require rapid maneuvers, should be avoided.
- Provisions should be made for the reasonable safe operation of work, particularly when the traffic is faster or heavier than normal day to day operations.
- Bicyclists and pedestrians, including those with disabilities, should be provided with access and reasonably safe passage through the TTC zone.

Temporary traffic control zones should be inspected as often as necessary to maintain the integrity of the zone, however, no zone should be left uninspected for more than twenty-four (24) hours. When work is suspended for short periods of time, TTC devices that are no longer appropriate shall be removed or covered.

Public relations staff must be notified of any temporary traffic control zone which will affect road users for more than eight (8) hours. Fire and Police services must be notified for any temporary traffic control zone which will prevent the passage of emergency response vehicles for <u>any</u> period of time.

Detours

A roadway may be closed to avoid sending road users through a TTC zone. A detour must be set up to safely bring the road users back to the original lane of travel when a roadway is closed. Exceptions to this rule may apply if:

1. the traffic level is low, i.e., less than 10 cars/hour, or
2. if the path around the TTC is readily visible and apparent from both sides of the site

Detours shall be clearly signed over their entire length. Refer to **Attachment F** for an illustration of this idea.

Protection of workers

In highly vulnerable work situations, particularly those of relatively short duration, law enforcement units may be stationed to heighten the awareness of passing vehicular traffic and to improve safety through the TTC zone.

In the case of mobile and constantly moving operations, such as pothole patching, landscape maintenance, street sweeping and striping operations, a shadow vehicle, equipped with appropriate lights and warning signs may be used to protect the workers from errant vehicles. Depending on road conditions and traffic speed, the shadow vehicle may be equipped with a rear-mounted impact attenuator.

Any vehicle used in the maintenance of roadways or right-of-ways that has a top speed of less than 25 mph must be equipped with a slow moving emblem. Additional lighting and/or reflective materials are highly encouraged to make the equipment more visible.

All employees and contractors working in the right-of-way in low light or reduced visibility conditions shall wear apparel meeting the ANSI 107-1999 standard performance for Class 2 risk exposure. Employees and contractors working only during daylight hours in clear weather conditions may wear non-reflective apparel that is either fluorescent orange-red or fluorescent yellow-green. Those same employees and contractors are also required to wear a hard hat meeting the ANSI Z89.1 1997 standard while working in the right-of-way.

Flaggers

Flaggers should be trained and able to demonstrate the following abilities:

1. ability to receive and communicate specific instructions clearly, firmly and courteously
2. ability to move and maneuver quickly in order to avoid danger from errant vehicles

3. ability to control signaling devices (such as paddles and flags) in order to provide clear and positive guidance to drivers approaching a TTC zone in frequently changing situations

4. ability to understand and apply safe traffic control practices, sometimes in stressful or emergency situations

5. ability to recognize traffic situations and warn workers in sufficient time to avoid injury

Section 6E of the TMUTCD describes flagger control in great detail. The manual is the ultimate resource for determining the appropriate use of these workers in TTC. There is also a pamphlet, Defensive Flagging – A Survivor's Guide that is issued to everybody that is trained to perform this important task.

Temporary Traffic Control Zone Devices

Section 6F of the TMUTCD describes traffic control devices in great detail. The manual is the ultimate resource for determining the appropriate size, type and use of the devices. Refer to the Reference Guide to Work Zone Traffic Control for a good overview of the appropriate size, type and use of the devices.

Since one of the criteria for a traffic control device is to "command the respect of vehicle operators and pedestrians" it is imperative that traffic control devices be evaluated regularly and damaged/worn devices be removed as needed. For consistent evaluation purposes and to manage the funds available for these devices the Quality Guidelines for Work Zone Traffic Control Devices pamphlet should be used to determine when it is time to remove these devices from service.

Typical Work Zones

A typical work zone in a residential area would be designed based on a 30 mph speed limit since that is the speed limit unless otherwise posted within the City limits. It would be unreasonable to attempt to design a traffic control plan for every street within the City. There are too many variables to be considered in every application.

Instead of listing all of the possible variations, this policy will simply give a few of the more common applications. The sign and cone spacing, as well as the length of buffers and tapers, are dependent upon the speed of the vehicles. For any applications not listed here refer to Section 6F of the TMUTCD.

Typical applications are sketched out in the following attachments:

Attachment F: Typical detour setup and a low speed, low flow, daytime operation

Attachment G: Three (3) lane and five (5) lane daytime operations. Spacing chart.

Work Duration

There are five (5) categories of work duration defined by the amount of time at the location. Less time at a location generally means that smaller, more mobile temporary traffic control devices can be used since placement of the devices themselves puts the worker at risk. However, the worker should remember that the any device will only be effective if it convinces drivers to alter their travel paths appropriately. High-intensity rotating, flashing, oscillating, or strobe lights on a vehicle, flag or channelizing device may be necessary to command the appropriate amount of attention.

The longer that the work activity takes, the more devices need to be used to protect the workers and the roadway users.

A. Mobile work is work that moves continuously or intermittently (stopping up to approximately 15 minutes).

B. Short duration work is work that occupies a location up to one (1) hour.

C. Short-term stationary is daytime work that occupies a location for more than one (1) hour within a single daylight period.

D. Intermediate-term stationary is work that occupies a location for more than one (1) daylight period up to three (3) days, or nighttime work lasting more than one (1) hour.

E. Long-term stationary work is work that occupies a location for more than three (3) days.

Section 6H of the TMUTCD describes work duration activities in more detail.

Traffic Incidents

As with work duration, traffic incidents are also classed based on the amount of time the work activity is expected to last. These classes are:

A. Minor – expected duration under sixty (60) minutes

B. Intermediate – expected duration of sixty (60) minutes to four (4) hours

C. Major – expected duration of more than four (4) hours

If a traffic incident is anticipated to last more than twenty-four (24) hours, applicable procedures and devices set forth in the rest of Section 6 of the TMUTCD should be used. Emergency responders should have the ability to assess an incident and the traffic conditions and then initiate procedures to have the appropriate temporary traffic controls set up for these estimates.

Warning and guide signs used for TTC traffic incident management situations may have a black legend and border on a fluorescent pink background.

For major and intermediate duration incidents, emergency responders should have pre-planning in place for most roadways. The pre-planning should include agreements with the Traffic Division to have traffic control devices loaded and personnel available to deliver and set up the devices within a reasonable amount of time.

Emergency vehicle lighting is especially important during the initial stage of a response. They are appropriate for warning road users of a road hazard ahead but can often be confusing and disorienting for road users from both directions. To minimize confusion, turn off headlights that are not being used to light the incident and, once traffic control devices are in place, minimize the use of emergency lighting.

For minor duration incidents, traffic control is typically the responsibility of emergency responders only.

Section 6I of the TMUTCD describes work duration activities in more detail.

REFERENCES

Texas Manual on Uniform Traffic Control Devices, Texas Department Transportation, 2006 Edition, http://www.dot.state.tx.us/TRF/mutcd.htm

Reference Guide to Work Zone Traffic Control, Texas Engineering Extension Service, 2006 Edition, http://www.teex.com/eu

Defensive Flagging – A Survivor's Guide, Texas Engineering Extension Service and Texas Department of Transportation, 1998 Edition, http://www.teex.com.eu

Quality Guidelines for Work Zone Traffic Control Devices, Texas Edition, American Traffic Safety Services Association, http://www.atssa.com

BEHIND-THE-WHEEL DEFENSIVE DRIVING CHECKLIST

Today's Date_____ Date of DDC Class _____

Driver's Name_____ License #_____

Position_____ Division_____ Supervisor _____

DOES DRIVER…	YES	NO	N/A
1. Perform vehicle safety check?	☐	☐	☐
2. Use seat belt?	☐	☐	☐
3. Use headlights when visibility is limited?	☐	☐	☐
4. Keep both hands on the steering wheel properly?	☐	☐	☐
5. Use farsightedness to prevent last minute surprises?	☐	☐	☐
6. Drive in lane offering least hazards?	☐	☐	☐
7. Maintain adequate space cushion while driving?	☐	☐	☐
8. Maintain appropriate and legal speed while driving?	☐	☐	☐
9. Drive alone, not in a crowd?	☐	☐	☐
10. Keep eyes moving continuously?	☐	☐	☐
11. Use mirror frequently?	☐	☐	☐
12. Recognize stale green lights?	☐	☐	☐
13. Approach intersections defensively with foot over brake pedal?	☐	☐	☐
14. Look both ways prior to entering an intersection?	☐	☐	☐
15. Look both ways before starting up on a green light?	☐	☐	☐
16. Recognize and react to blind intersections?	☐	☐	☐
17. Slow down gradually when approaching red lights and stop signs?	☐	☐	☐
18. Make full stop at stop signs?	☐	☐	☐
19. Adequate space cushion when stopped behind other vehicles?	☐	☐	☐
20. Keep steering wheel straight prior to left turn?	☐	☐	☐
21. Turn into proper lane when making turn?	☐	☐	☐
22. Use turn signals for turns and lane changes?	☐	☐	☐
23. Blend smoothly with merging traffic?	☐	☐	☐
24. Communicate effectively with horn and/or signal lights?	☐	☐	☐
25. Place foot over brake when sounding horn?	☐	☐	☐
26. Stop for pedestrians in crosswalks?	☐	☐	☐
27. Run amber lights?	☐	☐	☐
28. Commit traffic violations?	☐	☐	☐

_____ _____

DRIVING OBSERVER DATE

CITY OF BRYAN
DRIVER CERTIFICATION RECORD

NAME_____HIRE DATE_____DIVISION_____
DRIVER'S LICENSE (Circle all that apply)

CDL NON- CDL

CLASS A B C M

ENDORSEMENTS H N P S T X

RESTRICTIONS A B C D E I J K L M P Q R S T U V W

NUMBER_____EXPIRATION DATE_____

A 3-D Driving Test was completed satisfactorily for the vehicle listed, under the supervision of the qualified trainer. Supervisor must certify that the employee is qualified to operate all other equipment listed.

LIST EQUIPMENT DRIVER REQUIRED TO OPERATRE	TEST DATE	AUTHORIZED SIGNATURE

City of Bryan's driver's evaluation satisfactory? ☐ Yes ☐ No

I certify this driver received the City of Bryan's Defensive Driving Course on _____

_____
Safety Specialist

DRIVER EVALUATION

APPLICABILITY

All City employees whose job description requires the operation of either city owned or controlled motor vehicles will be subject to these standards. City controlled vehicles includes lease/rental vehicles, and vehicles driven by the owner on City business on a mileage reimbursable basis or a mileage/vehicle allowance.

Human Resources will evaluate an applicant's driving record before being hired or promoted. Risk Management will conduct an evaluation of driver's motor vehicle records annually. Risk Management will also conduct an evaluation if the driver receives a traffic citation or is involved in a collision while operating a City owned or controlled vehicle. Risk Management will determine whether a collision was preventable or non-preventable and points assessed by that determination.

GENERAL ADMINISTRATION

APPLICANTS

If the driving record of an applicant is unacceptable, the applicant will not be considered for employment in a driving position. The applicant may, however, be considered for employment in a non-driving position or later when the driving record meets City requirements.

EMPLOYEES

The Department manager will counsel those employees whose driving record is questionable, but acceptable at the time of the evaluation. The employee will be informed of the status of their driving record and necessary actions to maintain an acceptable driving record.

If an employee's driving record is unacceptable, the employee's department manager will be notified by Risk Management. The department manager will take necessary disciplinary action to remove the employee from driving. Employees who cannot drive may be:

- Assigned non-driving responsibilities within their current division, if available;
- Transferred to a non-driving position, if available;
- Dismissed, if neither of the above alternatives can be achieved.

EVALUATION CRITERIA

The City has established guidelines, which will be used to evaluate an employee's driving record. Driving records will be evaluated using the attached standardized point system to determine eligibility or continuing eligibility for driving. Records of violations incurred more than three years before evaluation will not be considered.

An applicant or an employee who has a final score of more than six points will not be considered for employment or continued employment requiring the operation of a City owned or controlled vehicle.

DRIVER EVALUATION

NAME_____ **DIVISION:** _____

Evaluation Type: (Check One)

☐Applicant ☐Promotion ☐Annual review ☐Vehicle Collision ☐Traffic Citation

Category A: COLLISIONS WITHIN LAST THREE YEARS Two or more non-preventable collisions during this time period will be treated as a single collision. The employee/applicant must submit a collision report on each collision to avoid full point assignment. Any traffic violations in connection with the collision(s) will be included in Category B.	***# of Collisions***	***Points***
	One	
	Two	
	Three	
	Total	

Category B: TRAFFIC VIOLATIONS WITHIN LAST THREE YEARS		
Violation	***Points***	***Total***
Driving under the influence of alcohol or non-prescription controlled substance	6	
Involuntary manslaughter or criminally negligent homicide	6	
Fleeing or eluding law enforcement officer	6	
Driving without a license, license currently suspended, revoked or fictitious license	6	
Failure to stop and render aid	6	
Failure to stop and give notification/Hit fixture	6	
Speeding over 20 MPH above speed limit, display of acceleration	4	
Disregarding stop signs, signals or warning signs	4	
Failure to yield ROW to emergency vehicle	4	
Failure to stop for a school bus or pass when flashing	4	
Driving on wrong side of road and other wrong way violations	4	
Improper turn or lane change	3	
Failure to yield right-of-way	3	
Backing without safety	3	
Following too closely	2	
Failure to signal	2	
Speeding	2	
Defective or inappropriate equipment/no seat belt	1	
No Liability insurance	1	
Invalid Tags or Inspection stickers	.5	
Other		
Total		

Category C: CREDIT FOR PERFECT RECORD	***Points***
No violations within the preceding 24 months	-2
Reporting all violations to supervisor	-1
Total	

Total Points Assessed: A____ + B____ + C____ = driver evaluation score_____

The DPS Motor Vehicle Record should be attached. Use the following grade scale as a guideline: 0-2 Best; 3-4 Average; 5-6 Questionable; 7+ Not Acceptable.

Evaluated By: _____ Evaluation Date: _____

R://Risk/Policies/SafetyPolicies/09-10Reviewed_Doc/DriverEvalFormAttachD010809

Effective Date: 07/01/99
Revision Date: 11/16/12

Fleet Safety Program

DEFINITIONS

Commercial Drivers License (CDL) - is required in the United States to operate any type of motor vehicle with a gross weight of more than 26,000 lb (11,793 kg) or tows a trailer of more than 10,000 lb (4,356 kg) if the gross combination weight rating is more than 26,000 lbs. A CDL is also required to operate any vehicle designed to transport more than 15 persons including the driver or a vehicle which requires hazardous materials placards.

Defensive Driving Course (DDC) - is a comprehensive driver improvement program with a basic 6 hour curriculum offering practical knowledge and techniques to avoid crashes, and to choose safe, responsible and lawful driving behaviors.

Federal Motor Carrier Safety Administration (FMCSA) - is focused on reducing injuries, crashes and fatalities involving large trucks and buses.

Driving While Intoxicated (DWI) - is the act of operating and/or driving a motor vehicle while under the influence of alcohol and/or drugs to the degree that mental and motor skills are impaired.

Equipment- See special purpose equipment.

Motor Vehicles- vehicles designed for over-the-road operation, primarily equipped with an odometer and their general purpose is the transportation of cargo or employees.

Special Purpose Equipment- vehicles which may or may not be designed for off-road operation, primarily not equipped with an odometer and their purpose is to perform special operations.

Vehicular Collision (Collision) - any event that results in injury and/or property damage as a direct or indirect result of the motion of a motor vehicle or special purpose vehicle.

PROGRAM OVERVIEW

The proper operation of motor vehicles and equipment is a must in conducting City of Bryan ("City") business. A properly maintained fleet, employee training and education is the cornerstone of any fleet safety program.

City drivers covered by this program are identified as those employees who operate a City motor vehicle and/or equipment or their personal motor vehicle as a part of their job duties. The City's main concern is keeping employees safe while minimizing damage to city motor vehicles and equipment. The goal of this policy is to achieve the fewest number of preventable vehicular collisions.

Therefore the Department Manager and/or designee shall review all motor vehicle collisions within that department in an effort to improve driving habits and attitudes of employees.

This fleet safety program focuses attention on two principal incident factors – driver error and motor vehicle failure. A planned program of driver selection, training and supervision can control driver error. Motor vehicle failure can be reduced by systematic preventive maintenance.

DRIVER SELECTION

The selection of employees required to drive is vital to this fleet safety program. The professionalism of City employees is under public evaluation each time a City motor vehicle is operated. It is important that only employees who have a healthy attitude toward their driving responsibilities be assigned to drive.

1. Applicant qualification procedures:
    a. An applicant for employment who may be required to operate a motor vehicle must complete the applicable portion of the employment application.
    b. Human Resources will make a visual check of the license for all successful candidates. It must be valid and of the proper type. If the license is not the proper type for the position, the new employee will have sixty (60) days to obtain the proper type of license, if approved by Human Resources. Until the new employee secures the proper license, they will not be allowed to operate a city motor vehicle.
    c. Human Resources will obtain a Motor Vehicle Record for all applicants selected for a driving position, and conduct a driver's license evaluation to determine if the applicant's driving record meets City of Bryan standards. An employee is not considered to have met the conditions of employment until the motor vehicle record check is completed and the City standards have been met.
    d. For those positions requiring a CDL, Human Resources will follow FMCSA regulations by checking the successful applicant's driving activity and record with former employers, and verifying the type of motor vehicles the applicant has operated.
    e. CDL drivers must also meet the FMCSA physical examination requirements prior to employment and may be reassessed when a question of fitness arises. As a governmental entity, the City may grant an exemption to the FMCSA requirements as long as the employee is still considered fit for duty. The exemption may be extended only to employees in CDL positions and not using the CDL for gainful employment outside the City. Police and Fire Department applicants must meet applicable Civil Service requirements.
2. Divisions may have additional requirements for driving specialty vehicles such as:
    a. Demonstrating familiarity with the type of motor vehicle assigned.

b. Passing written tests on driving regulations.
c. Passing a driver skill test administered by a supervisor or designated driver trainer
d. Maintaining safe driving habits that comply with standards of the department.

3. Promotions and/or Addition of Driving Duties
   a. An employee being considered for promotion to a driving position or employees who are to be given driving responsibilities (either City owned or personal motor vehicles driven on City business) must have a driver's license evaluation conducted prior to being assigned these duties or promoted.
   b. Qualification procedures for promotions will be handled in the same manner as a new hire.
   c. If a position previously did not require driving, but the scope of duties is broadened to include driving, these same procedures apply to the incumbent in that position.

EMPLOYEES WITH DRIVING RESPONSIBILITIES

Employees who operate a City motor vehicle/equipment or their personal motor vehicle as part of their job duties have special responsibilities. The safe operation of their motor vehicle is part of their job. The employee must:

1. Maintain a valid State of Texas driver's license of the proper class required for the position and a safe driving record, both on and off the job. Employees in driving positions may be demoted to non-driving positions or terminated with evidence of unsafe driving practices (whether on or off the job), failure to maintain a valid and proper driver's license or evidence of abuse to City equipment.
2. Sign an agreement to submit to random alcohol and drug screens immediately after the employee's supervisor is notified of an arrest for Driving While Intoxicated (DWI) either on or off the job. The employee must also successfully complete a return to work drug and alcohol screen before resuming driving duties. The random screens will continue until the disposition of the charges at a minimum. A minimum of six (6) screens will be administered in the first twelve (12) months of the agreement.
3. Follow defensive driving practices.
4. Report to the supervisor, in writing, all defects noticed during any motor vehicle inspection or while operating the motor vehicle. The employee shall use every precaution to prevent additional damage or unnecessary expense to City motor vehicles.
5. Call police, immediate supervisor and Risk Management to investigate all collisions involving a City motor vehicle.
6. Comply with the drug and alcohol policy found in the City Personnel Policies handbook.
7. Be responsible for traffic citations received while operating City motor vehicles.

8. Inform supervisor when involved in a vehicular accident on or off the job in which the employee is at fault and/or received a moving traffic violation.

DEFENSIVE DRIVING

Driver training is required for all City drivers. Vehicle and/or equipment operators must complete the Defensive Driving Course within 90 days of employment or assumption of driving duties and every three years thereafter. Risk Management will maintain a current list of those employees in driving positions and the completed course dates for defensive driving.

INSPECTION AND MAINTENANCE

A motor vehicle and/or equipment inspection program will be implemented to help the operators locate any unsafe conditions that may result in a collision and/or injury. Operators are responsible for the safe conditions and operation of City owned motor vehicles and equipment. Motor vehicle deficiencies affecting safety shall be corrected before the motor vehicle is placed in operation.

1. Motor vehicle and/or equipment operators are to ensure that motor vehicles are in a safe and mechanically sound condition before placing the motor vehicle or equipment into operation. This includes all equipment attached to or towed by the motor vehicle. This will require the operator to perform a pre-operation check. Each division shall develop an equipment maintenance checklist, which will fit the needs of the equipment of their division. It shall require at a minimum, checks of oil, water, tire pressure, fuel, brakes, battery and signals as well as other checks which may be characteristic to that piece of equipment. Failure to perform these will be considered motor vehicle neglect. This checklist shall be retained in the division for at least one year.
2. Operators must realize equipment maintenance is an ongoing process. Equipment must be observed and checked while in operation to ensure operations can continue safely. Operators should correct all deficiencies that can be corrected without the assistance of a mechanic. Any problems detected should be noted on the checklist. If the operator feels the motor vehicle and/or equipment has a serious deficiency and should not be driven he or she should cease operation of the motor vehicle and/or equipment and contact his or her immediate supervisor or division manager. If there is evidence of collision damage, the operator shall report it to the supervisor before leaving. Otherwise, the operator could be charged with collision.
3. Supervisors and managers are to ensure operators properly maintain motor vehicles and equipment and perform daily maintenance checks. The appropriate supervisor will check all maintenance problems or unsafe conditions reported by operators. All serious deficiencies will be reviewed with the operator and, if necessary, Fleet Services to determine whether or not the motor vehicle should be operated. Verified problems will be scheduled with Fleet Services for necessary repairs.
4. Fleet Services will repair all unsafe conditions reported by division and with necessary approvals, will correct any other unsafe conditions that may be

discovered during the repair process. Fleet Services will assist supervisors and/or managers in determining whether or not a motor vehicle can be operated safely. Fleet Services will not release equipment referred for repairs until the condition is believed safe and mechanically suitable for continued operation.

MOTOR VEHICLE/EQUIPMENT OPERATING RULES

Over-the-Road Motor Vehicle Operation

1. Only properly trained and qualified employees shall be authorized to operate and maintain motor vehicles.
2. All traffic laws will be observed. Extra precaution will be used when driving during inclement weather. Headlights shall be utilized when visibility is minimal, when required by law and when otherwise prudent.
3. Employees will be alert at all times to avoid injury and property damage while operating equipment. Supervisors shall monitor continuous hours worked and remove employees from work duties if hours are becoming excessive.
4. Each operator will be in good physical condition and capable of accepting the responsibility for the safe operation of the equipment.
5. Seat belts, if provided, will be worn at all times.
6. Check clearances before moving motor vehicle. Caution should be used when backing.
7. Riders will not be allowed on running boards, tailgates, fenders, bumpers, on top of cabs, on tow bars or towed equipment. Arms and legs will remain inside motor vehicle. Employees will not be allowed in or on motor vehicles unless safe seats are provided (Exception- driver trainee and evaluator).
8. When leaving motor vehicles or equipment unattended, set brakes, engage gear, shut off engine and remove key. Take special precautions on inclines. Park on level ground if possible.
9. Getting on or off motor vehicles or equipment while in motion is prohibited.
10. Know clearance height of motor vehicle when traveling.
11. Shut off engine when filling fuel tank, checking or filling radiators, checking or servicing battery, checking oil level or adding oil or hydraulic fluid and other lubrications.
12. No smoking, use of matches or open flames will be allowed when examining or filling fuel tank or battery.
13. Motor vehicles having braking or steering defects shall not be driven. They shall be towed to Fleet Services and repaired before being returned to service.
14. Observe these precautions when hauling:
    - Load materials within safe load limits.
    - Keep loads from projecting beyond body of motor vehicle that might cause a hazard to other motor vehicles, pedestrians or structures.
    - Check overhead clearance.
    - Warning flags or lights will mark overhanging portions of loaded equipment and equipment must be tied down.
15. In addition to hauling precautions, observe these precautions when towing:

- Stay from between towed equipment and towing motor vehicle unless hooking or unhooking.
- Verify that ball size and tongues are matched correctly.
- Engage all pins and/or safety latches.
- Extra weight should be shifted to the front of the trailer. Do not exceed the hitch's rated tongue capacity. Balance loads so that the trailer sits as level as possible while towing.
- All trailers must be registered and equipped with working lights. Wiring harnesses must be compatible with the towing motor vehicle.
- Safety chains will be crossed under the tongue and attached to the tow motor vehicle. Efforts should be made to keep the chains from dragging on the ground.
- All towed loads shall be secured. Materials that may fall out or be blown out must be covered.

Special Purpose Equipment Operation

1. Observe all applicable Over-the-Road Motor vehicle Operations Rules.
2. Keep steps and platforms clean. Drivers will ensure that shoes are free of mud, grease or oil that could cause slipping. Accumulations of dirt, grease and oily rags shall not be permitted on any equipment.
3. Job conditions shall determine safe operating speeds. Care shall be taken in starting, turning, stopping and, in particular, backing.
4. When operations prove hazardous to highway users, traffic will be controlled or warned by flagger, signs, temporary barricades or other means.
5. Protection against falling objects, swinging loads and bad weather shall be provided by either having an enclosed or covered cab or the use of a hard hat.
6. Operators shall wear protective goggles when excessive glare or dust is in working areas. Consideration will be given to provide respiratory protection when extreme dust conditions exist.
7. During operations, drivers will not wear loose clothing or jewelry that may become entangled in moving parts.
8. All clearance heights along the proposed route of travel shall be checked, and operators will watch carefully to avoid striking low hanging objects with the equipment. Limit the distance for operating equipment to no closer than ten (10) feet from any electrical lines. A sign will be posted on the equipment to remind operators. Electric Distribution should be contacted for any questions concerning high voltage wires.
9. Operators shall not allow passengers to ride on their equipment.
10. When operators are working their equipment in areas where vision is limited, they shall use signal persons to direct operations.
    a. Signal persons shall use standard hand signals, shall be in positions where they are visible to the operators and at the same time can see the equipment booms, buckets, etc.
    b. Operators shall move their machines only on sign from the signal person and, except in extreme emergencies; they shall not take signals from anyone else.

c. Swinging loads shall not be swung over the heads of workers. Workers on the ground shall stand clear of the swing radius of equipment cabs, buckets, etc.

11. Know location of underground lines before digging. A one call system shall be notified and allowed to flag all underground utilities before excavation begins.
12. Maintain a fire extinguisher on equipment.
13. Maintain a first aid kit on equipment.
14. Wear ear muffs or plugs when noise level of operating equipment exceeds OSHA guidelines.
15. No smoking, matches or open flames will be allowed when working with flammable materials.
16. Wear proper personal protective equipment to avoid hot asphalt burns (gloves, full body clothing, good shoes, etc.).

VEHICULAR COLLISION REPORTING

All collisions involving City owned motor vehicles and/or equipment must be reported immediately to their supervisor or manager. Additionally, any operator receiving a citation for a traffic violation while operating City equipment must report the incident to his or her supervisor.

1. At the Scene of the Collision
   a. Stop immediately and determine injuries and/or damage. Obtain ambulance, if necessary. Render first aid to injured persons. Move injured persons as little as possible to avoid further injury or hemorrhage.
   b. Protect the scene of collision; set emergency signals; obtain assistance to control traffic and prevent obstructing traffic more than necessary.
   c. Notify police immediately. Information to the police should be what event occurred and should only be factual statements, not opinions. Offer no information regarding the responsibility for the collision or what should have been done to avoid the collision.
   d. Notify supervisor or division manager. The supervisor or division manager shall immediately contact Risk Management. A member of Risk Management shall investigate at the scene, if possible.
   e. Identify potential witnesses.
   f. Make no admission of fault or negligence to bystanders. Say no more than necessary and do not sign any statements or releases.
   g. Take photos before moving the motor vehicles. Clear the motor vehicles from the roadway if they are obstructing traffic. Use accident kits to gather information and provide insurance information to the other driver. Listen carefully and note accurately any comments made by the other parties at the collision.
2. Procedures After the Collision
   a. Turn in the completed accident kit to supervisor.

b. Supervisor or a member of Risk Management shall complete a Vehicle Collision Report. Forward the Accident kit to Risk Management within 48 hours.
c. If any claim or suit papers are received, they are to be forwarded to Risk Management.
d. Any questions pertaining to the City of Bryan's insurance coverage or insurance carrier shall be directed to Risk Management.

3. Documentation

Any time that a City motor vehicle is involved in a collision, Police must be notified and a case number must be issued. If the collision involves a police motor vehicle, reporting requirements must follow General Orders. Blue Forms will not be used in any collision involving City motor vehicles or personal motor vehicles while on City business.

a. Major Collisions
    - Operator uses accident reporting kit, takes photos
    - Witnesses complete statements
    - Officer completes State collision report (SR-B3)
b. Minor Collisions
    - Operator uses accident reporting kit, takes photos
    - Witnesses complete statements
    - Officer completes Incident report
c. No Damage or Injury Collisions
    - Officer completes incident report, takes photos
    - Officer does NOT request case number

DISCIPLINARY ACTION

From time to time, an employee may fail to perform within the accepted framework of this collision prevention policy and prudent motor vehicle operations. In those cases, the manager may initiate disciplinary action. However, by providing training and maintenance of motor vehicles and equipment, the City intends to achieve the fewest number of preventable collisions and minimize employee failures, which may require discipline.

Attachment A: Behind the Wheel Defensive Driving Checklist
Attachment B: Driver Evaluation Policy
Attachment C: Driver Evaluation Form

Effective Date: 06/11/10
Revision Date: 00/00/00

Aerial Work Platforms

This policy covers many devices used to lift workers to an elevated height. OSHA refers to these devices as "vehicle-mounted elevating and rotating work platforms" but they are also commonly referred to by names such as bucket trucks, man lifts, sky rangers, scissor lifts, etc.

DEFINITIONS

Boom – The part of the aerial work platform that articulates in the horizontal or vertical range and thus delivers the platform to the desired location.

Platform – The level surface where the worker is situated to perform tasks. This may be a fiberglass bucket, a metal cage or some variation thereof.

Vehicle – Any device upon which the platform is attached that can be moved without human assistance.

ALL LIFTS

1. No vehicle, boom or platform modifications are allowed unless approved, in writing, by the manufacturer of the lifting device or a professional engineer.
2. All welding on the equipment must be performed by welders proficient in metal being joined.
3. Booms and outriggers must be secured for travel before equipment is moved.
4. It is prohibited to drive the vehicle with a worker on the platform.
5. Always set the brakes and chock the wheels. Outriggers must be set on a solid surface.
6. It is prohibited to exceed the weight loading limit of the platform. Always verify the limit before using a pulley, winch or hand line to lift things while on the platform.
7. The platform and the boom must be independent of any materials being worked on. It is not permitted to tie off to an adjacent pole, structure or equipment.

LIFTS USED FOR ELECTRICAL WORK

1. Bucket trucks and any other equipment used around energized electrical lines must be tested periodically in accordance with ANSI A92.2-1969.
2. Critical hydraulic and pneumatic components (those that could result in free fall or free rotation of the bucket) must be in conformance with ANSI A92.2-1969.
3. Distance requirements and de-energizing criteria must be met when working in the vicinity of energized lines.

OPERATORS

1. Duplicate controls must be available on the platform and at ground level. Lower controls may not be operated unless an emergency exists or the bucket worker gives permission.
2. All workers must be trained in the safe use of aerial work platforms before being allowed to use them. There must always be at least one other worker on the ground that can operate the secondary controls when an aerial work platform is in use. While the boom is elevated all employees in the area must wear hard hats.
3. Workers must stand firmly on the floor of the platform. It is prohibited to sit or climb on the edges of the bucket.
4. It is prohibited to wear climbing spikes while on the platform.
5. A lanyard, harness and electrically rated hard hat are required while on the platform. The lanyard must be attached to the boom or the platform.

WORK IN TRAFFIC LANES

Workers are prohibited from extending the boom or platform out across active traffic lanes. If work needs to take place over traffic lanes, then the lanes must be blocked by a secondary vehicle or in accordance with traffic plans approved by a professional engineer.

Effective Date: 08/12/10
Revision Date: 00/00/00

HEAVY EQUIPMENT OPERATION

This policy is intended to educate employees on safe procedures around heavy equipment used both on and off the road. This policy must be followed in addition to manufacturer recommendations.

Horseplay or excessive speed while operating heavy equipment is unacceptable. Operating heavy equipment at high speeds or in an unsafe manner often results in serious injuries or fatalities. An employee involved in horseplay while operating heavy equipment will be subject to disciplinary action up to and including termination.

DEFINITIONS:

Off-road heavy equipment - Any machinery capable of being driven on public roadways with a top speed less than 25 mph.

On-road heavy equipment - Any motor vehicle that would require the operator to possess a class A or B driver's license.

Roll Over Protection System (ROPS) - Operator compartments (usually cabs or frames) designed to prevent operator injury should the vehicle roll over. Seat belts must be worn for ROPS to be effective.

Hearing protection - Devices used to protect individuals for hearing damage when the 8 hour time-weighted average noise level exceeds 85 dB or any of the values found in OSHA 29CFR 1910.95(b)(2) Table G-16.

Ball hitch - A ball, of varying size, used to connect a towing vehicle to a trailer.

Receiver hitch - A connector, of varying size and style, used to connect a trailer to a towing vehicle.

Pintle hitch - A connector attached to the towing vehicle, used in connection with a lunette ring on a trailer, commonly seen on military vehicles but also used where heavy loads or rough terrain are expected.

GVWR – Gross Vehicle Weight Rating is the maximum allowable total mass of a road vehicle or trailer when loaded - i.e. including the weight of the vehicle itself plus fuel, passengers, cargo, and trailer tongue weight.

HEAVY EQUIPMENT

All

- Most heavy equipment operates at sound levels that can damage hearing during normal usage. Appropriate hearing protection must be used.
- Shut off all equipment before refueling. Do not smoke. Ground the fuel nozzle to the filler neck when refueling.
- If the equipment is too small to accomplish the job at hand, either get a larger piece of equipment or break up the job into manageable segments. Do not push machinery beyond its design capability.
- Operators exiting heavy equipment while in or near a public roadway must have on a safety vest and hard hat.
- Seat belts must be fastened if the vehicle or machinery is so equipped.
- Never get on or off a machine that is in motion.
- Never jump on or off of heavy equipment. Operators will always use the three-point contact rule when climbing onto or off heavy equipment. The three-point rule means having both feet and one hand, or both hands and one foot in contact with the equipment at all times.
- Service the equipment according to manufacturer's recommendations. Inspect all equipment prior to use. Report any problems to Fleet and your supervisor. Fleet Services will decide if the equipment can be scheduled for service or needs to be removed from use immediately.
- No safety devices may be disabled, muffled, taped or otherwise prevented from accomplishing their intended task.
- There are standardized hand signals for crane operations but other operations tend to have inconsistent use of hand signals. Always clarify the meaning of hand signals to be used before starting heavy equipment operations. A two inch error due to miscommunication can cost thousands of dollars.
- Most heavy equipment uses hydraulic systems. These systems commonly operate at greater than 1000 psi. These pressures are great enough to inject hydraulic fluid into the flesh or, in the case of a thin enough stream, lacerate the flesh from the body. Always treat hydraulic leaks with care. Use a piece of cardboard or a stick to pinpoint leaks. Clean up small leaks immediately and report large leaks to Risk Management and the Fire Department.

Off-Road

- All off-road equipment must have a roll over protection system (ROPS) installed. No modifications to the ROPS will be allowed without Fleet approval.
- No riders will be allowed on off-road heavy equipment unless it is equipped with a seat for additional riders.
- All off-road equipment (heavy or otherwise) must be equipped with a slow moving vehicle emblem when driven on public roadways. If the equipment is to be "roaded" for more than a 2-3 blocks (~1000 feet) a registered vehicle, with

hazard flashers activated, must follow the equipment. When backing up traffic, pull over, and allow vehicles to pass.

- When operating equipment on uneven terrain, always keep the heaviest parts of the machine or suspended load pointing uphill. Avoid driving sideways on a hill and keep the load as low as possible if that is unavoidable or if turning the vehicle on any surface.
- Do not park on a steep incline. If parking on a grade is unavoidable use wheel chocks.
- If you will be digging in the ground, call the underground line locaters (811) and give them enough time to locate buried lines before digging.
- When operating equipment with articulating arms always clear the area within your reach of bystanders.
- Do not move articulating arms or loads over personnel or cabs of vehicles.
- Do not operate any articulating arm within ten (10) feet of overhead energized power lines unless electric distribution crews have cleared you for closer operation.
- Lower any articulating arms or buckets to the ground or the recommended stowing position before getting off or shutting down the machine.

On-Road

A few examples of City owned on-road heavy equipment are dump trucks, haul trucks, fire apparatus, sweepers, trash trucks, grappler trucks, bucket trucks and pothole patchers. The list is not all inclusive and should only be considered as guide to determine what should be considered on-road heavy equipment.

- Do not operate heavy equipment unless you are properly licensed for that vehicle.
- Always try to be on a level surface if raising the bed of a truck. If you are on a slope, point up or downhill while dumping.
- If you need to travel while dumping material, always check for overhead obstructions in the line of travel.
- Verify that the bumper, license plate, hitch and lights are clear of mud and debris before driving on a public roadway again.
- Audible back up alarms and/or back up video systems are strongly recommended for all on-road heavy equipment. If a second person is available, then they must get out of the vehicle and assist the driver in backing safely.

JACKING EQUIPMENT

Off-Road

- Equipment must only be jacked from the equipment's designated jacking points. Check the manufacturer's manual or look for a small "hook" sticker.
- The equipment must be stationed on level ground before jacking.
- Care must be taken to ensure jack will not slip at either end when fully extended. A wooden block between the jack and the load can be used to provide a more stable connection.

- Always set the emergency brake and straighten the wheels before jacking.
- A concrete floor is preferable but if uncompacted dirt is your only choice be sure to use solid timber to distribute the load evenly. Extra care should be used in supporting the extreme weight of heavy equipment whenever jacking is necessary. Even concrete floors can fail if the loading is exceeded.
- Do not crawl under a piece of elevated equipment until it rests on jack stands or strong timbers adequately strapped together and stabilized.
- Use only jacks rated to lift the load. Check the capacity plate. Do not use jacks that are leaking, cracked or bent.
- If it is necessary to work under a suspended load such as a dump truck bed or front end loader bucket, put a sleeve over the hydraulic cylinder or drop the load onto a built-in support bracket. Do not trust hydraulic systems to hold suspended loads indefinitely.

On-road

The only City employees that should be jacking up on-road heavy equipment should be Fleet Services. Occasionally they will find themselves in need of jacking the equipment while it is off-road but it is strongly preferred that this equipment be towed to the shop before being serviced in any way. At the shop, mechanics can raise the equipment in the safest manner possible.

TOWING AND HAULING

Towing

Employees are prohibited from towing any vehicles or equipment on a public roadway using straps, cables, ropes or chains. Contact Fleet Services for transporting disabled equipment to the shop.
There are many different types of towing connections. It is the employee's responsibility to make sure that the connections are properly rated for the equipment being towed and that the trailer is rated for the equipment/material being hauled.
There are three basic towing connections. (1) The fifth wheel or platform style is rarely used in City operations. (2) Balls are the most common connection. (3) Pintle hitches are commonly used for heavier towing operations.

Pulling capacities of balls are dependent on the size of the ball and the size of the shank.

Class	**Ball size**	**Shank size**	**Load capacity (pounds)**
I	1-7/8"	¾"	2,000
II	1-7/8"	1"	3,500
II	2"	¾"	3,500
III	2"	1"	6,000
III	2-5/16"	1"	6,000
IV	2-5/16"	1-1/4"	10,000

Trailers have couplers to attach to the ball. They have rated capacities as follows:

Class	**Weight of pulled trailer (loaded)**

I	2,000 pounds
II	3,500 pounds
III	5,000 pounds
IV	10,000 pounds

Pintle hooks come in four sizes, their pulling capacities are:

Class	**Weight of pulled trailer (loaded)**
V	16,000
VI	30,000-50,000
VII	60,000
IX	100,000

- All trailers must be equipped with safety chains which must be crossed under the coupler before attaching them to the towing vehicle.
- Any trailer rated over 4,500 pounds GVWR must be equipped with brakes. The brake connector must be attached to the vehicle's bumper or frame (not the ball).
- All trailers rated at or above 4,500 pounds GVWR (generally more than one axle) are required to have inspection stickers just like a car. Towing an uninspected trailer is a citable offense.
- All trailers are required to have license plates.
- Red reflectors are required on the rear of all trailers and amber reflectors are required on the front and sides of all trailers.
- All trailers must have functioning stop, turn and tail lamps as well as rear and side marker lamps.

Hauling

- Loads may not be more than eight and a half feet (8' 6") wide without a special permit issued by The Texas Department of Transportation.
- Loads may not extend more than four feet (4') beyond the end of the trailer.
- Any load extending past the trailer frame must also be identified with red or orange flagging material.
- Loads may not be more than fourteen feet (14') tall.
- Tie down all loads or equipment. Cover any materials that may be blown out while traveling.
- Do not strap across equipment with chains unless tie down points are not provided. Rubber tired equipment should be secured to prevent chain loosening upon loss of tire pressure.
- Always balance the load on the trailer. Generally, position the heaviest portion of the machine or load directly over the axles whenever possible. Proper balance will maintain enough weight on the receiver hitch to prevent "fishtailing" and also keep the towing vehicle's steering wheels in contact with the ground.

RESPONSIBILITIES

Risk Management

Risk Management should make every effort to ensure employees have proper training on heavy equipment. Training can include but should not be limited to continuing education, in-service training and safety meetings.

Division Managers

Division Managers are to ensure that time and funds are available for employee training. Division Managers should also work closely with supervisors, foremen or crew leaders to ensure proper training is provided for employees on every piece of equipment they are expected to operate.

Supervisors

At a minimum, supervisors will cover the following topics before allowing employees to operate heavy equipment.

1. Appropriate use of the equipment
2. Pre-operation inspections
3. Adjustments, maintenance and operating limitations of the equipment
4. Care and cleaning requirements
5. Safety features, work zone safety and personal protective equipment requirements

Employees

Employees must follow the instructions and directions of their trainer. Trainers must observe skill sets and quiz the employee on proper operation, maintenance and care of the equipment. Once trained, the employee becomes responsible for the safe operation, proper care and maintenance of the equipment they are operating.

City of Bryan, Texas
Confined Space Entry Permit

Division: _____ Date: _____ Time: _____a.m./p.m.
Purpose of Entry: _____
Location: _____
Authorized Entrants: _____
Entry Attendants: _____

Confined Space Entry Requirements:

Preparations for entry:	Yes	No	N/A
1. Lines broken, capped or blanked	___	___	___
2. Lines purged-flushed & vented	___	___	___
3. Electrical Lockout/Tagout	___	___	___
4. Oxygen concentration _____% (19.5% min., 23.5% max.)	___	___	___
5. Flammable vapor test LEL (<10%)	___	___	___
6. Toxic vapors test			
Carbon Monoxide <50 ppm	___	___	___
Hydrogen Sulfide <10 ppm	___	___	___
7. Forced air ventilation	___	___	___
Blower rated at _____SCFM			
Estimated volume of confined space_____ft^3			
(One air exchange @ 5-10 min. required) SCFM/ ft^3 =_____min.			
8. Barricaded properly	___	___	___
9. Personnel in area notified	___	___	___
10. Hot work permit	___	___	___
11. Approved electrical	___	___	___
12. Communication equipment operating satisfactorily	___	___	___
13. Suitable for entry	___	___	___
14. Fire Services notified of time, location hazards, and number of people (361-3888)	___	___	___
15. Fire Service employee notified _____			

Conditions for entry:	Yes	No	N/A
1. Standby helper at entrance able to perform CPR/First Aid	___	___	___
2. Breathing equipment used SCBA or Cartridge (Circle one)	___	___	___
3. Safety harness worn and lines attached	___	___	___
4. Hoist/anti-fall protection at entrance	___	___	___
5. Biological hazards	___	___	___
6. Personal protective equipment (hand, eye, foot, head, etc.)	___	___	___
7. Air testing equipment at entrance	___	___	___
8. Rescue equipment at entrance	___	___	___
9. Fire extinguishers at entrance	___	___	___
10. First aid equipment at entrance	___	___	___
11. Lighting (outside)	___	___	___
12. Low voltage lighting (inside)	___	___	___
13. Special equipment	___	___	___

List: _____
_____
_____
_____
_____
_____

Employee Entering/Leaving:

Duty	Name	Time In	Time Out

Atmospheric Tests: (at least one per 30 minutes)
Gas detector model: _____Serial No. _____

Time	Oxygen Content	Flammable Vapor	Carbon Monoxide	Hydrogen Sulfide	By

Special Precautions: _____

Explanation of items marked No: _____

Exceptions Approved By: _____ and _____

Risk Manager / Safety Specialist Division Manager / Project Supervisor

Each individual must review and sign or initial the permit before permit is valid and entry is allowed.

Permit approved by the following signatures: I certify all actions and conditions for safe entry were accomplished.

_____ _____ _____

Project Supervisor Supervisor-In-Charge Entry Attendant

Permit Canceled: Date: _____ Time: _____a.m./p.m. Reason: _____

All persons and equipment exited: _____

(Persons approving permit)

Confined Space Entry Log

Location:____

Supervisor-In-Charge: ____

Permit Date: ____

Date	Name	Division	Duty to Perform	Time In	Time Out

To: Risk Management

From: _____

Date: _____

Subject: List of Permanent Confined Spaces

As a confined space owner I am notifying you of the list of permanent confined spaces within my area of responsibility. I will notify you of any change to this list. I have attached a site plan for each location.

Specific Location	Description of Confined Space	Type/Category	Hazards Imminent/Potential

_____, Manager

_____

(Division)

Site Plan Drawing of Confined Spaces

Division: _____ Date of Drawing: _____

All Possible Hazards:

Approved by: _____

HOT WORK PERMIT
CONFINED SPACE ENTRY
CITY OF BRYAN

LOCATION:_____DATE:_____.

WORK TO BE PERFORMED:_____.

_____.

TOTAL HOURS TO COMPLETE:_____.

Atmosphere Tested:_____Reading:_____.

Fire Suppression Equipment:

quantity	type	location

FIRE DEPARTMENT NOTIFIED:
Date and Time:_____.

Fire Service Employee notified:
.

APPROVAL;

_____.
.
Risk Manager/Safety Specialist Division Manager/Project Supervisor

Checklist for non-permitted confined space entry

This form may be used when a confined space has limited hazards and may be entered safely. Although single person entry into a confined space may be done safely, no entry into a confined space may be done without atmospheric testing and proper notification of the time of entry and exit.

"Confined space" means a space that:

1. is large enough and so configured that an employee can bodily enter and perform assigned work; and
2. has limited or restricted means for entry or exit; and
3. is not designed for continuous employee occupancy

Entrant	Location	Oxygen	Carbon Monoxide	Flammability	Hydrogen Sulfide	Date	Time in	Time out	Person notified	Radio (R) or telephone (T)

Effective Date: 07/01/99
Revised Date: 04/09/09

CONFINED SPACE ENTRY

The City of Bryan considers the safety and well-being of its employees to be a priority. Reflecting this concern, the City will enforce nationally recognized standards to assure that any employee entering a confined space will not be subjected to conditions that may cause injury, illness or death. If there is ever any doubt regarding the safety of a confined space entry, the decision will be in favor of protecting the workers first. This policy applies to City employees at all City locations and facilities.

DEFINITIONS

Acceptable Environmental Conditions – Confined Space workplace conditions in which uncontrolled hazardous atmospheres are not present, and which include any additional environmental criteria the employer may require for employee entry into a permit required confined space.

Attendant – An individual stationed outside the permit required confined space that is trained as required and who monitors the authorized entrants inside the permit required confined space.

Authorized Entrant – An employee who is authorized by the employer to enter a permit required confined space. Authorized entrants may rotate duties, serving as attendants if the permit program and entry permit so state. Any properly trained person with the authority to authorize entry by other persons may enter the permit space during the term of the permit, provided the attendant is informed of the entry.

Blanking or Blinding – The absolute closure of a pipe, line or duct, by fastening across its bore a solid plate or "cap" which completely covers the bore; which extends at least to the outer edge of the flange at which it is attached; and which is capable of withstanding the maximum upstream pressure.

Double Block and Bleed – The closure of a line, duct or pipe by locking and tagging a drain or vent which is open to the atmosphere in the line between two locked-closed valves.

Emergency – Any occurrence (including any failure of hazard control or monitoring equipment) or event(s) internal or external to the confined space which could endanger entrants.

Engulfment – The surrounding and effective capture of a person by a liquid or finely divided solid substance.

Entry – The act by which a person intentionally passes through an opening into a permit required confined space and includes ensuing work activities in that space. The entrant is

considered to have entered as soon as any part of the entrant's face breaks the plane of an opening into the space.

Entry Permit – The written or printed document established by the employer. The content of which is based on the employer's hazard identification and evaluation for that confined space.

Entry Permit System – The employer's written procedure for preparing and issuing permits for entry and returning the permit space to service following termination of entry.

Hazardous Atmosphere – An atmosphere which exposes employees to a risk of death, injury, incapacitation, or acute illness from one or more of the following causes:

1. A flammable gas, vapor or mist, or
2. an airborne combustible dust at a concentration that obscures vision, or
3. an oxygen deficient atmosphere, or
4. an atmospheric concentration of any substance that could result in employee exposure, or
5. any atmosphere or condition recognized as immediately dangerous to life or health.

Hot Work Permit – The employer's written authorization to perform operations which could provide a source of ignition, such as riveting, welding, cutting, burning, heating or chemical cleaning.

IDLH – Immediately dangerous to life or health.

Inerting – Rendering the atmosphere of permit space non-flammable, non-explosive or otherwise chemically non-reactive by such means as displacing or diluting the original atmosphere with steam or a gas that is non-reactive with respect to that space.

Isolation – The separation of a permit space from unwanted forms of energy, which could be a serious hazard to permit space entrants. Isolation is usually accomplished by such means as blanking or blinding; removal or misalignment of pipe sections or spool pieces; double block and bleed; or lockout and/or tagout.

Line Breaking – The intentional opening of a pipe, line or duct that is or has been carrying flammable, corrosive or toxic material, an inert gas or any fluid at a pressure or temperature capable of causing injury.

Non-Permitted Confined Space
Also known as a Low Hazard Permit Space. This is a permit space where there is an extremely low likelihood that IDLH or engulfment hazards could be present and where all other serious hazards have been controlled.

Oxygen Deficient Atmosphere – An atmosphere containing less than 19.5% oxygen by volume.

Oxygen Enriched Atmosphere – An atmosphere containing more than 23.5% oxygen by volume.

Permit Required Confined Space - Any space employees can bodily enter and perform assigned work, which by design has limited openings for entry and exit, and which is not intended for continuous employee occupancy. They could be above or below ground. They include, but are not limited to:

Digesters	Pipelines	Sewers
Boilers	Water Storage Vessels	Containerized Welding
Meter Vaults	Lift Stations	Tunnels
Air Handlers	Manholes	Small Equipment Rooms
Sump Pits		

Responsible Person – A person who has been trained in confined space entry and egress; has the knowledge and skill to address problems encountered; has been officially delegated the authority and responsibility for the work and makes decisions to protect the workers.

Retrieval Line – A line or rope secured at one end to the worker by a chest-waist harness, full-body harness or wristlets and the other end secured to either a lifting (or other retrieval) device or to an anchor point located outside the entry portal.

RESPONSIBILITIES

Risk Management

Risk Management is responsible for periodic review and updates of this policy and serves as a resource to questions or problems concerning this policy. Additionally, Risk Management can assist in developing bid specifications for safety equipment and devices.

Managers

The manager or designated representative is responsible for preparing the confined space entry permit and verifying that the specified conditions have been met prior to entry. Expired permits must be available for review for at least two years.
The manager or designated representative will furnish Fire Services with a list of permanent confined spaces identifying the specific location and the usual hazards typically found in the confined spaces. To aid emergency response by Fire Services a site plan drawing will be attached for each permitted confined space. The plan drawing will identify the confined space exits and entrances, all possible hazards and the most direct all-weather route to the confined space from the nearest roadway. Fire services shall be notified of any changes to the list.

Managers or their designated representative will continuously identify possible confined spaces and evaluate the hazards. After identifying and evaluating the conditions at each site, managers will designate the space as either permitted or non-permitted and follow the procedures for that category.

Contractors will use City of Bryan or OSHA safety standards when performing confined space operations while under contract with the City of Bryan.

Employees and Supervisors
Employees and their supervisors entering a confined space have the obligation to critique the preparation and to safely implement the work activity within the space. They must also sign the permit upon each entry. Employees are to be knowledgeable about the hazards and skills in entering and exiting confined spaces.

Supervisors and workers have the obligation to say "NO" to entering a confined space:

1. If all of the proper procedures have not been completed, or
2. if there is a suspected hazard that has not been tested for, or
3. if there is any doubt in the mind of the worker or supervisor as to who is to enter, or
4. if there is any doubt that all steps have been taken to protect the worker.

All employees are expected to set the example by conforming to this policy. Any exceptions to this policy can be made ONLY by approval of the Manager/and the Safety Specialist or their designees.

TRAINING

Employees whose duties require they enter a confined space shall be trained in the proper procedures for entry, work, observation and rescue activities. Employees shall follow all steps of the procedures in this policy. Any employee who disregards these rules shall be subject to disciplinary action.

Because of the hazards involved in confined space entry it is the division's responsibility to train employees who enter and work in confined spaces in the use of lifesaving equipment. The training program should be specifically designed for the type of confined space involved and the problems associated with entry and exit such as:

1. Emergency exit procedures
2. Hazard recognition
3. Use of respiratory and safety equipment
4. First aid and CPR
5. Lockout and/or equipment isolation procedures
6. Rescue
7. Fire protection
8. Communications
9. Atmospheric testing equipment

Testing of employees should take place to evaluate competency and determine the need for any necessary retraining. Testing and training shall be documented and forwarded to Risk Management for retention.

PROCEDURES

Preparation of the confined space and entry into the confined space shall follow the following procedures:

1. Barricades and Warning Signs should be placed in conspicuous locations to warn others of the confined space; especially when there is an opening such as an excavation or manhole. Where necessary permanent signs must be posted at entry point stating that a permit is required.
2. Atmospheric testing shall be done prior to entry, after each break, and during work activities. Testing shall be done for oxygen, flammable/explosive gasses or vapors and suspected toxic substances such as hydrogen sulfide (H_2S), carbon monoxide (CO), carbon dioxide (CO_2), etc.
    a. A person who is trained in the use of the testing equipment, knows the hazard and is authorized to perform the test shall do the testing. Self-contained breathing apparatus will be worn if entry is required during testing.
    b. Testing instruments shall be used only within the calibration period specified and field checks will be done for a qualitative response prior to testing the confined space.
    c. Final testing shall be performed with mechanical ventilation systems operating if they are being used during the entry.
    d. Entry is permitted only if:
        - The oxygen level is between 19.5% and 23.5%
        - A flammable gas, vapor or mist is not in excess of 10% of the LEL (Lower Explosive Limit)
        - The atmospheric concentration of any substance is not above its permissible exposure limit.
    e. Test results outside these limits require additional ventilation or special equipment and procedures before entry.
    f. Any untested atmosphere shall be assumed to contain all hazards.
3. Decontamination shall be done in such a way to drain, clean, remove biological hazards, and eliminate flammable, toxic or corrosive chemicals or vapors from the confined space. The objective of decontamination procedures is to allow employees to safely work in the confined space without the need of special ventilation or personal protective equipment.
4. Isolation shall be done to prevent the entry of hazardous substances into the confined space.
5. Lockout/Tagout shall be done to ensure that all equipment and sources of potential hazardous energy releases are de-energized and immobilized. This shall be done following proper Lockout/Tagout procedure. Power equipment capable of causing movement within the confined space shall be de-energized and locked in the “off” position. The only key for this equipment shall be in

the possession of an employee within the confined space. Lockout and/or Tagout devices shall prevent or inhibit reactivation of energy isolation devices.

6. Ventilation shall be done using mechanical air movers or blowers properly located to assure that fresh ambient air passes through the confined space. The situation will determine whether the ambient air should be blown out of or drawn into the confined space. If atmospheric testing indicates concentrations outside of acceptable ranges, forced ventilation shall be continued throughout the entry/work period. A normal air exchange equivalent to three times the volume of the enclosure is recommended prior to entry and 6 to 12 times per hour thereafter.
7. A Required Confined Space Entry Permit shall be obtained before entry. This written permit shall provide information relative to the work assignment incorporating, but not limited to the following:
    a. Description of the confined space and work to be performed.
    b. Location of the confined space.
    c. Preparations made for a safe entry (i.e. decontamination, ventilation, isolation, lockout/tagout, etc.).
    d. Employees assigned to the job.
    e. Testing requirements and results.
    f. Date and time of entry.
    g. Precautionary measures.
    h. Required safety and rescue equipment.
    i. Prior to entry, signature of all personnel involved in inspection, testing and compliance.
    j. Duration of permit.
        - The permit shall be posted at the point of entry.
        - Signatures of the project supervisor, the supervisor of the person(s) entering the confined space, the entry attendant and the person(s) entering the confined space.
        - Permits shall be issued for a period of one shift only. For succeeding shifts or if the work is left unattended for more than one hour, the responsible individual shall again check all conditions of the permit retest the area and appropriately sign the permit. If left unattended for a shorter period, re-testing before re-entry may be required depending upon the nature, location and surrounding conditions of the confined space. Situations involving toxic materials, flammable gases or corrosive materials shall require re-testing after any unattended period.
        - Upon completion of the job, the permit shall be returned to Risk Management.
8. Appropriate personnel shall be notified and the atmosphere tested before entry into non-permitted confined spaces. Use the checklist for non-permit required confined space entries form.
9. Special safety equipment (i.e. harnesses, lifeline breathing air, tripod, rescue winch and protective clothing) shall be documented on the permit.

a. All persons entering a confined space shall wear a safety harness or other approved retrieval device. Lifelines shall be attached to safety harness. A tripod, hoist and retrieval winch shall be utilized where necessary.
b. Self contained breathing apparatus (SCBA) or line respirators shall be worn:
   - In contaminated or dusty environments where toxic concentrations are outside the permissible exposure limits.
   - Where ambient conditions are subject to change.
   - Where oxygen concentrations may drop below 19.5%
   - In IMMEDIATELY DANGEROUS TO LIFE OR HEALTH environments(IDLH)
c. Supervisory personnel shall be present in situations that require the use of a self-contained breathing apparatus.
d. Special protective clothing shall be consistent with the potential exposure and be specified on the confined space entry permit.

10. Special Work Practices shall be considered given the work associated with the confined space and the precautionary measure specified on the permit.
    a. Others in the work area shall be notified that a permit has been issued for personnel to work in a specified confined space.
    b. A ground fault interrupter is required when electric tools require greater than 24 volts. Low voltage lighting, 24 or 12 volt, shall be used.
    c. Compressed gas cylinders, other than breathing air, shall not be taken into a confined space.
    d. Special additional ventilation and/or breathing air shall be required when cutting or welding is done within a confined space. Hoses and nozzles of cutting or welding equipment must be carefully checked before use in a confined space. Any potential fire hazard must also be reviewed and a HOT WORK PERMIT completed. Should an unusual operation such as welding, burning or chemical cleaning be undertaken, prior approval of the manager is necessary.
    e. Pneumatic tools shall be operated with compressed air only.
    f. Vapor tight (explosion proof) lighting is to be used in a confined space when combustible vapors are present.
    g. Open flames or smoking are prohibited in a confined space.
11. A Rescue Plan is an essential requirement of every Permit Required Confined Space entry. A rescue plan includes an attendant and a plan that will effectively and safely remove the individual(s) from the confined space in the event the unexpected happens.
    a. One entry attendant shall be stationed outside of the confined space when internal work is being performed. This person's primary duty is to maintain constant verbal or visual contact with those inside the confined space and to summon emergency assistance if necessary.
    b. The entry attendant shall:
       - Be familiar with the permit procedure.
       - Be alert for changing conditions.
       - Know how to summon assistance immediately.

- Know how to use all rescue equipment specified for the job.
- Be able to perform CPR and first aid.
- Have no duties that would take them away from the point of entry. However, they may be assigned duties pertaining to the confined space such as:
  - Assisting in checking safety equipment
  - Handing tools to workers inside the confined space
  - Assisting employees in and out of the confined space
  - Keeping lifelines free of entanglement

The entry attendant is expected to take all emergency actions necessary. No one is to enter the confined space until all are properly equipped to safely enter. If proper entry equipment is not available, all will wait for emergency assistance to arrive.

c. Minimum safety and rescue equipment for ANY confined space entry requiring a vertical lift is as follows:
   - Lifeline and harness (attached)
   - Tripod with mechanical hoist
   - First aid equipment immediately available
   - 5 minute duration escape air pack or built-in warning device (if breathing air is being supplied)

12. Physical requirements for those employees who might enter a confined space should take into consideration the increased hazard. These employees must rely heavily upon their physical, mental and sensory attributes, especially under emergency conditions. They must be able to wear SCBA under simulated and actual working conditions. Facial hair that hinders or impairs an SCBA is prohibited. Division managers will ensure that any necessary physical requirement (i.e. pulmonary function, hearing, smell, etc.) is conveyed to Human Resources for inclusion in the job description.

REFERENCES

United States Department of Labor, Occupational Safety and Health Administration. Permit-required confined spaces. OSHA 29CFR 1910.146.

American National Standards Institute. Safety requirements for working in tanks and other confined spaces. ANSI Z17.1-1977.

Centers for Disease Control, National Institute for Occupational Safety & Health. Criteria for a recommended standard – Working in confined spaces. NIOSH 80-106.

PURGING SPECIFICATIONS

Based on Four (4) Foot Diameter Manholes:

Depth of Manhole (ft.)	Minimum Purge Time
7 or less	5 minutes
7 thru 11	6 minutes
12	7 minutes
13	8 minutes
13 thru 16	9 minutes
16 thru 18	10 minutes
18 thru 20	11 minutes
21	12 minutes
21 thru 23	13 minutes
24	14 minutes

Depth of Manhole (ft.)	Minimum Purge Time
24 Thru 26	15 minutes
27	16 minutes
27 thru 29	17 minutes
30	18 minutes
30 thru 32	19 minutes
33	20 minutes
33 thru 35	21 minutes
36	22 minutes
36 thru 39	23 minutes
40	24 minutes

- If toxic or flammable gases are discovered, the purging time must be doubled.

Ventilation duration is based on 1120 CFM ventilators.

Effective Date: 07/01/99
Revision Date: 04/29/10

CUTTING, WELDING AND BRAZING OPERATIONS

Cutting, welding and brazing operations always pose hazards to employees. The nature of the operations requires proper training and attention to safety. The following procedures outline the proper personal protective equipment, maintenance of equipment and procedures to follow to minimize the risk of these operations.

BEFORE THE JOB STARTS

1. Safety in welding lies as much in proper preparation as in the actual performance. The best and safest place to do welding, if it is feasible, is in a properly equipped welding shop. Welding work that can be done in the maintenance shop should be organized so that the jig or worktable is ready for the welding operation with parts and equipment handy.

2. Wherever the work is to be done, a pre-start check to eliminate potential hazards is important. This means checking general housekeeping, equipment, electrical and fuel supply connections (and making sure fuel cylinders are secured and capped). Extinguishers or other firefighting equipment must be readily available - a fire watcher may be required in certain conditions outlined in the OSHA welding standard, such as how close combustible materials can be to the "point of operation".

3. Because welding produces infrared and ultraviolet rays that can easily burn unprotected eyes, shields or screens should be erected around the welding job as needed to prevent the arc flash and ultraviolet rays from injuring other workers.

4. Since there is a potential explosion danger, the OSHA standard states "No welding, cutting or other hot work shall be performed on used drums, barrels, tanks or other container until they have been cleaned so thoroughly as to make absolutely certain that there are no flammable materials present...which might produce flammable or toxic vapors."

PERSONAL PROTECTIVE EQUIPMENT

1. Always wear eye protection when working in the vicinity of cutting and welding operations. When cutting or brazing wear goggles with UV dark green or brown protection that have side shields. When welding operations are in progress, always wear full face hoods with the lenses that meet proper color and darkness requirements. **Never look directly at the cutting, welding or brazing process without filtered eyewear.**
2. Wear long sleeve cotton shirts made of a heavy weight 100% denim and denim pants to meet OSHA 1920.269.10. If possible these should be treated with fire retardant. Sleeves shall be rolled down and buttoned. Collars should be buttoned. Whenever

possible, leather sleeves and bib or leather welding apron should be worn to protect from contact burns.

3. Insulated leather gloves specifically designed for cutting and welding (gauntlet gloves) should be worn at all times during the cutting and welding process. Tongs should be used to pick up and move hot metal. **Never pick up metal without wearing a glove.**
4. Wear leather boots during welding and cutting operations. Pants must always be outside the shaft of the boot. Steel toe boots are recommended due to the weights of metal normally involved with cutting and welding operations.

EQUIPMENT AND MAINTENANCE

1. All equipment shall be maintained according to manufacturer's directions to insure proper function. Damaged or altered equipment shall be repaired or replaced immediately. If repairs are not possible at the time of discovery, those items shall be tagged out of service until repairs can be completed.
2. All electrical leads must be free of cuts, scrapes and bare spots. These must be taped to prevent the possibility of electrocution. Regulators must be set to the proper ranges to insure correct function of the equipment and protect from damage to equipment and personnel. Oxygen and Acetylene should be set at a 4:1 ratio. **(Ex. Oxygen set at 30 psi; Acetylene should be set at approximately 7-8 PSI.) The Oxygen should not exceed 40 psi and the Acetylene should not exceed 10 psi of pressure.**
3. Welding rods should not be left in welding stinger when not in use.
4. Assured welding grounds shall be moved only after welding operations cease.
5. Lubricants will not be used on gas cutting and welding equipment connections or hoses. **The use of petroleum lubricants may cause an explosive condition.**
6. When transporting cylinders the gauges will be removed and the caps installed. The cylinders shall be transported in a secured upright position.
7. Store gas cylinders in segregated areas from different gases with a minimum of 25 feet of clear area separation. All cylinders must be stored in the vertical position with the caps secure and all cylinders secured by chain from a stationary object.
8. Gas cylinders shall only be used in the upright position. Cylinders must never be used while in the horizontal position.

PROCEDURES AND OPERATIONS

1. Screens that protect the casual observer from direct light radiation shall be in place while welding operations are in progress. Appropriate fire suppression extinguishers shall be located in the immediate area of all cutting and welding operations.
2. Cutting torches will be started with flint strikers only. **The possession of pocket lighters in areas designated for cutting or welding operations is strictly forbidden.** Oxygen controls at the torch head shall be turned on one half turn and the mixer valve turned off before igniting the torch. The acetylene valve should be cracked open slightly and the striker used to initiate a burn, then the mixer valve is used to adjust the flame.
3. The flame should be adjusted to produce a well-defined blue flame while the cutting lever is depressed.

4. The torch should be tagged out of service immediately and sent in for repair if the flame is consistently yellow or red or the torch back flashes during operation.

SAFE HANDLING OF COMPRESSED GAS CYLINDERS

Special care will be taken when handling compressed gas and compressed air equipment. Below are the procedures:

1. Cylinders will be stored in an upright position and secured so they will not fall.
2. Cylinders will have protective cap in place at all times, except when in use.
3. Cylinders will have their contents properly identified. Unmarked cylinders will be taken out of use immediately.
4. Cylinders will not be lifted or moved by their valve cap.
5. When cylinders are transported, they will be secured in an upright position.
6. Oxygen cylinders will not be stored within 25 feet of fuel-gas cylinders or combustible material except when in use on a cutting rig.
7. Cylinders will be kept away from the actual welding equipment so that sparks or flames will not reach them.
8. Cylinder valves, couplings, regulators, hoses and all other apparatus will be kept free of oily or greasy substances.
9. Cylinder valves will be closed before moving.
10. Empty cylinder valves will be closed.
11. Cylinders will not be placed where they might become part of an electric circuit, such as arc welding machines or within 5 feet of an electrical outlet.
12. Cylinders will never be used as rollers or supports.
13. Never attempt to mix gases in a cylinder or to transfer gases from one cylinder to another.
14. Oxygen from a cylinder will not be used without attaching an oxygen regulator to the cylinder valve, unless the cylinder is attached to a manifold.
15. Before connecting a regulator to a cylinder valve, the valve will be opened for an instant and then closed.
16. Before removing a regulator from a cylinder valve, close the valve and then purge the gas from the regulator.
17. Employees will never force connections that will not fit or tamper with the cylinder valves.
18. Do not use leaking cylinders.
19. Leaking cylinders will be taken outdoors away from sources of ignition and a supervisor will be notified.
20. Oxygen will never be used as a substitute for compressed air.
21. Acetylene cylinder valves will not be opened more than one and one-half turns.
22. Hoses for compressed air and gas equipment shall be used exclusively for those operations.

Effective Date: 07/01/99
Revision Date: 09/10/10

EXCAVATION

The City of Bryan's employees will strictly adhere to all safety rules and regulations pertaining to trenching and excavation work as stated in the Federal Register (Vol.54, No. 209) and OSHA standard 29CFR 1926.650 through 1926.652. Employees working in a trench or excavation exceeding five (5) feet in depth must follow a trench safety system that is in accordance with OSHA standard 29CFR 1926, Subpart P, Excavation.

This policy and its procedures apply to all departments and divisions involved in trenching and excavation activities. It also requires all divisions to require Texas Health and Safety Code, Title 9, Subtitle A, Chapter 756, Subchapter C, 756.021, 756.022, 756.023 compliance by contractors or their employees when performing work in an excavation on City property.

DEFINITIONS

Benching – A method of protecting employees from cave-ins by excavating the sides to form a series of horizontal levels or steps.

Cave-In – The separation of a mass of soil or rock material from the side of an excavation or from under a trench shield or support system. The sudden movement into the excavation is sufficient in quantity to entrap, bury or otherwise injure and immobilize a person.

Competent Person – An employee who is trained and capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees and who has authorization to take prompt corrective action to eliminate them. That employee will have at least three (3) years experience working in trenches and excavation and be familiar with this policy.

Excavation – Any man made cut, cavity, trench or depression in an earth surface formed by earth removal.

Hazardous Atmosphere – One which by reason of being explosive, flammable, poisonous, corrosive, oxidizing, irritating, oxygen deficient, toxic, or otherwise harmful, may cause death, illness, or injury.

Protective System – A method of protecting employees from cave-ins, material that could fall or roll into an excavation, or the collapse of adjacent structures. Protective systems include support systems, sloping and benching systems, shield systems, and other systems that provide necessary protection.

Ramp – An inclined walking or working surface that is used to gain access to one point from another, and constructed from earth or structural materials such as wood or steel.

Registered Professional Engineer – A person who is registered as a professional engineer in the state where the work is to be performed. However a professional engineer registered in any state is considered a "professional engineer" when approving designs for manufactured protective systems or tabulated data used in interstate commerce.

Shield – A structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the structure.

Shoring – A structure such as a metal hydraulic, mechanical or timber shoring system that supports the sides of an excavation and is designed to prevent cave-ins.

Sloping – Shaping an excavation in a manner that the sides incline away from the excavation so as to prevent cave-ins. The angle of incline varies with factors such as soil type, environmental conditions or exposure, and application of surcharge loads.

Support System – A structure such as underpinning, bracing, or shoring which provides support to an adjacent structure, underground installation, or the sides of an excavation.

Trench – A narrow excavation made below the surface of the ground. In general, the depth is greater than the width, but the width of the trench (measured at the bottom) is no greater than fifteen (15) feet. If forms or other structures are installed in an excavation so as to reduce the dimension measured from the forms or structure to the side of the excavation to fifteen (15) feet or less the excavation is also considered to be a trench.

RESPONSIBILITY AND AUTHORITY

1. It is the responsibility of management to ensure all employees involved in trenching and excavation activities are properly trained and supervised by a competent person. If for any reason the competent person's judgement or capabilities are in question, they will be removed from competent status until an investigation can be conducted.
2. It is the responsibility of all employees to follow all guidelines established by this policy.

PROCEDURES

1. All surface encumbrances are to be removed or supported as necessary to provide employee safety. Excavated soil shall be placed no closer than two (2) feet from the edge of the excavation.
2. All utilities will be located or identified before excavation begins. Provisions will be made for removal or support of utilities during the excavation process.
3. A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are four (4) feet or more in depth so as to require no more than twenty-five (25) feet of lateral travel for employees. Ladders must extend at least three (3) feet above the level that they provide egress to.
4. Employees will be protected from exposure to vehicular traffic, overhead loads, mobile construction equipment and hazardous atmospheres.
5. A competent person will determine the appropriate means of protection for each excavation. The competent person assesses each excavation for sloping, an approved shoring system, or a trench shield in accordance with OSHA standard 29 CFR 1926

Subpart P. The competent person must insure each excavation conforms to these means of protection unless designed by a registered professional engineer.

6. All soils shall be considered type “B” soils as stated in the referenced standard unless designated by a registered professional engineer. The presence of water, vibration or other factors will automatically lower the type of soil to type “C”, in accordance with OSHA standard 29 CFR 1926.
7. A competent person shall be at each location and ensure all excavations proceed safely. The competent person has the authority to halt or suspend any or all operations until the criteria of this policy and the standard are met.
8. Systems designed to protect the employee from cave-ins without sloping or benching, that is; a support system, shield or other protective system, must be approved by a registered professional engineer.

City of Bryan
Excavation Checklist
(5 feet of greater)

The following checklist is provided as a guideline for meeting City of Bryan Safety Policy Manual requirements for Excavation Safety. The checklist should be completed before any personnel enter the excavation.

1. All public utility systems notified (Dig-Tess)? □ Yes □ No
2. Checked for permit requirements? □ Yes □ No
3. Hazardous atmosphere tested? □ Yes □ No
4. Constructed means of egress from excavation? □ Yes □ No
5. Controlled exposure to vehicle traffic? □ Yes □ No
6. Controlled exposure to falling loads? □ Yes □ No
7. Warning system for mobile equipment? □ Yes □ No
8. Determined emergency rescue equipment is needed and available? □ Yes □ No
9. Prepared for hazards of water accumulation? □ Yes □ No
10. Verified stability of adjacent structure? □ Yes □ No
11. Constructed protection from loose rock and soil daily? □ Yes □ No
12. Scheduled a worksite inspection? □ Yes □ No
13. Prepared for fall protection? □ Yes □ No

APPENDIX F TO SUBPART P — SELECTION OF PROTECTIVE SYSTEMS

The following figures are a graphic summary of the requirements contained in subpart P for excavations 20 feet or less in depth. Protective systems for use in excavations more than 20 feet in depth must be designed by a registered professional engineer in accordance with §1926.652(b) and (c).

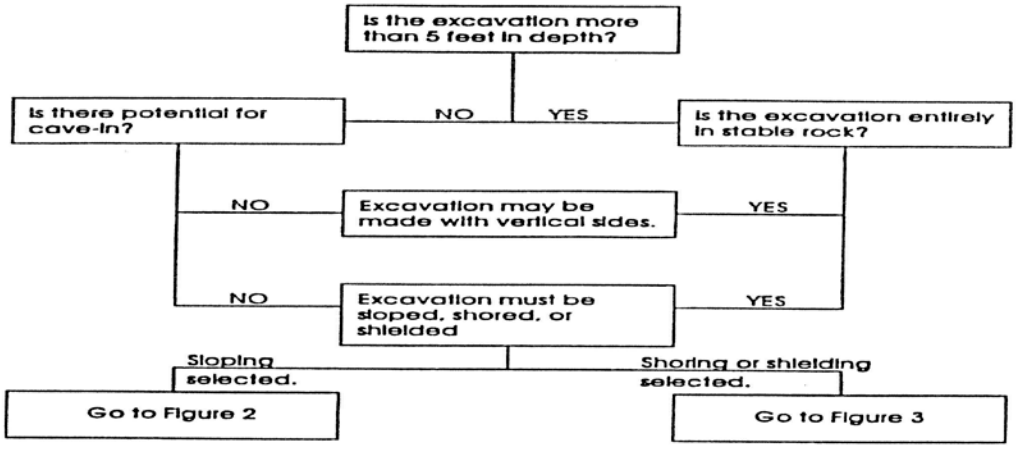


FIGURE 1 — PRELIMINARY DECISIONS

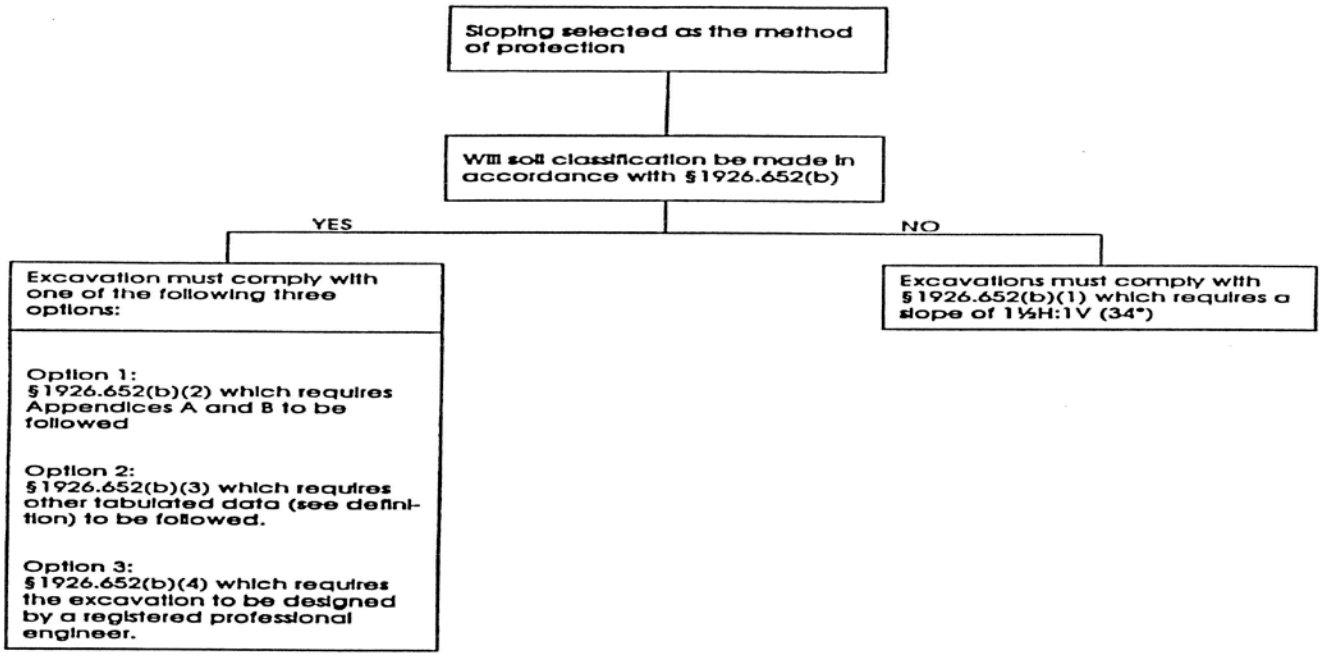


FIGURE 2 — SLOPING OPTIONS

Shoring or Shielding selected as the method of protection.

Soil Classifications is required when shoring or shielding is used. The excavation must comply with one of the following four options:

Option 1:
§1926.652(c)(1) Which requires Appendices A, C and D to be followed (e.g. Timber shoring).

Option 2:
§
1926.652(c)(2)which requires manufacturers data to be followed (e.g. Hydraulic shoring, screw jacks, air shores, shields)

Option 3:
§1926.652(C)(4) which requires tabulated data (see definition) to be followed (e.g. any system as per the tabulated data).

Option 4:
§1926.652(c)(3) Which requires the excavation to be designed by a registered professional Engineer (e.g. any designed system).

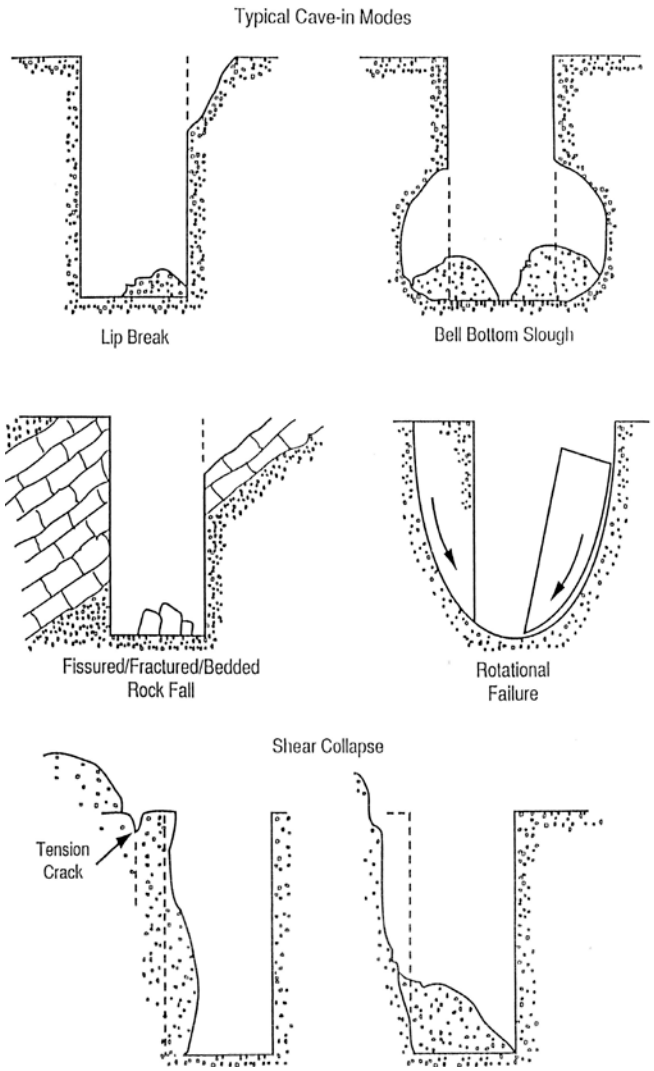


FIGURE 3—SHORING AND SHEILDING OPTIONS

SLOPING

Sloping is the oldest and still a popular method of preventing cave-ins. Sloping means that the sides of an excavation are laid back to a "maximum allowable slope" from which they will not collapse. In the original standard this was known as the angle of repose, a term that was borrowed from stockpiling. That term is not used in the new standard. Persons wanting to slope using the new standard have four options. They may slope to the angle required by the standard for Type C, which is the most unstable soil type. They may use the tables provided in the standard to determine the maximum allowable angle (after determining the correct soil type). They may use tabulated data prepared by a registered professional engineer, or they may have a registered professional engineer design a sloping plan specifically for that job. It should be noted that any job over 20 feet in depth requires the services of a registered professional engineer if sloping is to be used. Spoil piles are to be at least two feet from the edge of the trench (we recommend at least four feet) and should likewise be sloped to a safe angle.

As can be seen from the chart below, a 10-foot-deep trench in Type B soil would have to be sloped back to a 45 degree angle (one horizontal to one vertical), or 10 feet back in both directions. In Type C the sides would have to be sloped back to a 34 degree angle (1½ horizontal to 1 vertical) or 15 feet in both directions. While the method is certainly safe, it requires considerable right of way, which may eliminate it as a method of preference in neighborhoods or in close proximity to buildings, roads, etc.

Maximum Allowable Slopes

Stable Rock	Vertical	(90°)
Type A	¾h:1v	(53°)
Type B	1h:1v	(45°)
Type C	1 ½h:1v	(34°)

In addition to simple sloping, sloping and benching or multiple benching may be done as seen in the following charts or as directed by a registered professional engineer.

MAXIMUM ALLOWABLE SLOPES

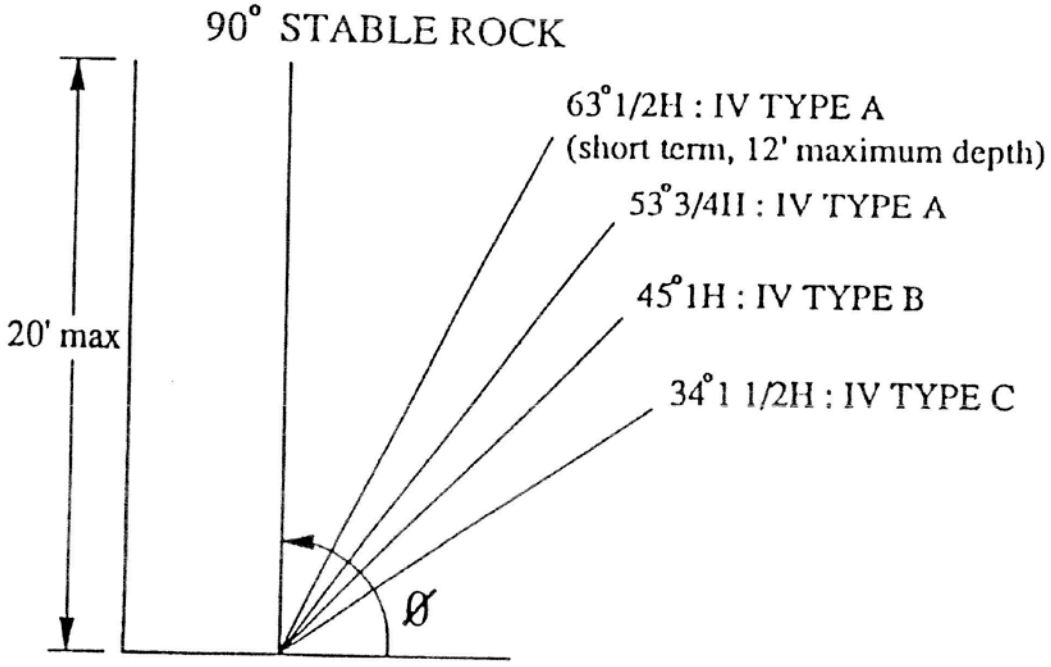
Soil or rock type	Maximum allowable Slopes (II:V) For excavations less than 20 Ft
Stable rock Type A [2] Type B Type C	Vertical (90°) 3/4:1 (53°) 1:1 (45°) 1½:1 (34°)

Notes:

1.Numbers shown in parentheses to next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off

2. A short-term maximum allowable slope of ½ H:1V (63°) is allowed in excavations in type A soil that are 12 ft (3.67 m) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 ft (3.67 m) in depth shall be 3/4 H:1V (53°)

3. Sloping or benching for excavations greater than 20 ft deep shall be designed by a registered professional engineer.



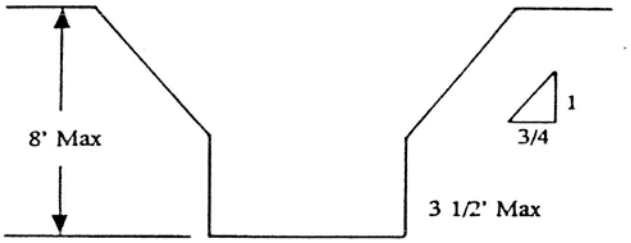
Unsupported Vertically sided lower portion—Maximum 8 ft in depth

3.All excavations 8 ft or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical side of at least 3 1/2 ft

Unsupported Vertically Sided Lower Portion -- Maximum 8 Feet in Depth

3. All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical side of 3½ feet.

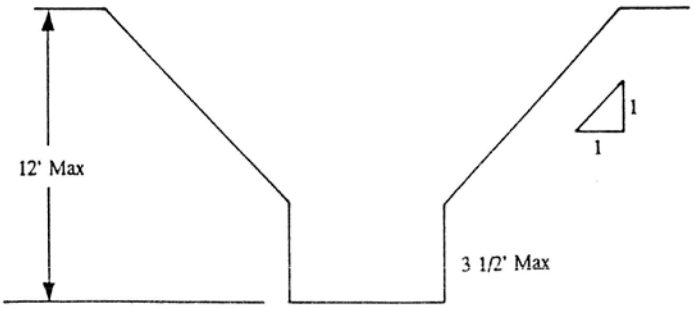
3.



Unsupported Vertically Sided Lower Portion -- Maximum 12 Feet in Depth

4. All excavations more than 8 feet but not more than 12 feet in depth which have unsupported vertically sided lower portions shall have a maximum allowable slope of 1:1 and a maximum vertical side of 3½ feet.

4.



5. All other simple slope, compound slope and vertically sided lower portion excavations shall be in accordance with the other options permitted under 1926.652(b).

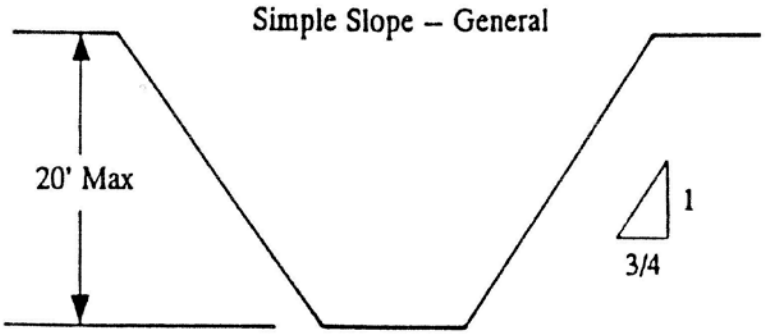
SLOPE CONFIGURATIONS

(All slopes stated below are in the horizontal to vertical ratio)

EXCAVATING IN TYPE A SOIL

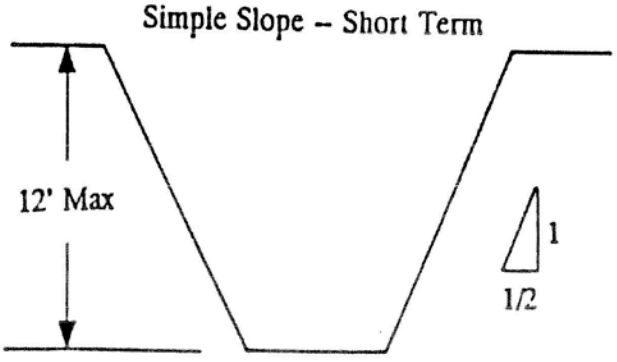
1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of ¾:1.

1.



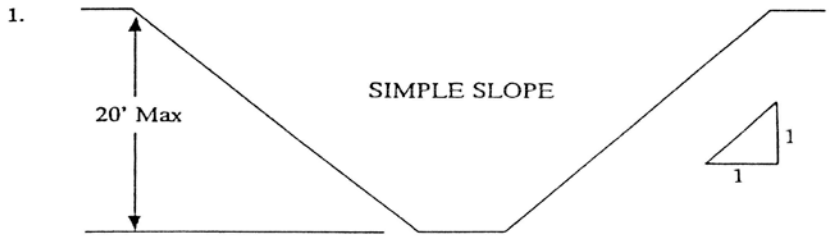
2. Exception: Simple slope excavations which are open 24 hours or less (short term) and which are 12 feet or less in depth shall have a maximum allowable slope of ½:1.

2.

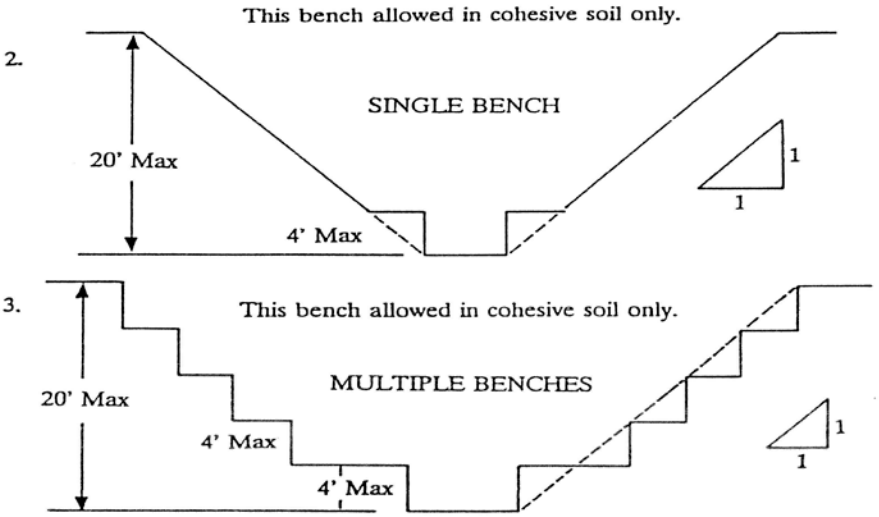


EXCAVATING IN TYPE B SOIL

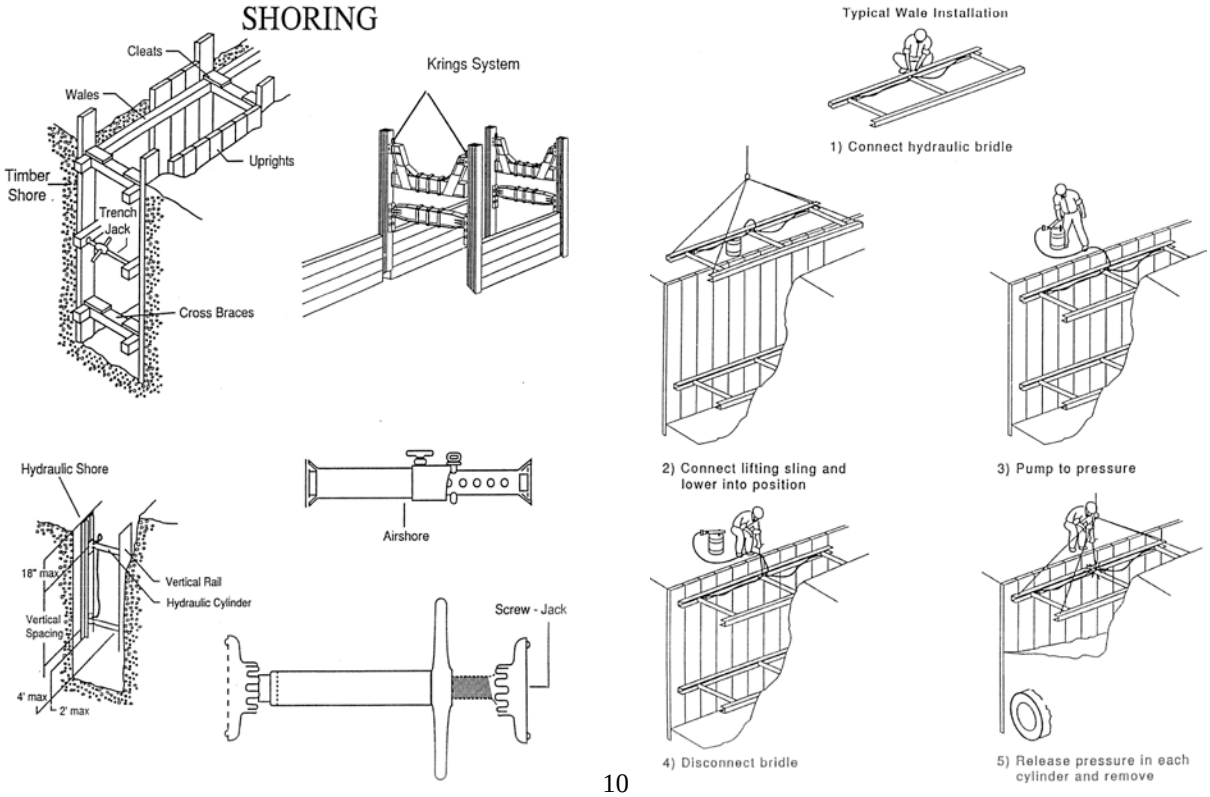
1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.



2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions as follows:

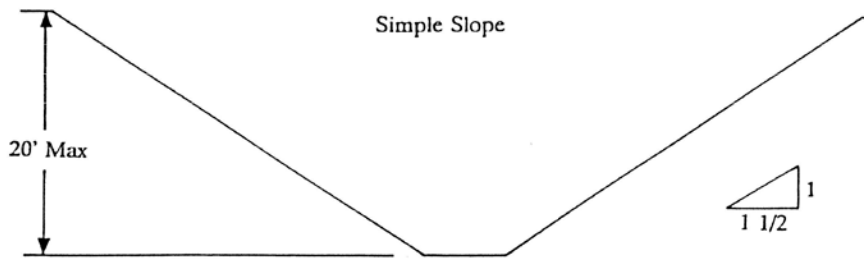


All other sloped excavations shall be in accordance with the other options permitted in 1926.652(b).



EXCAVATING IN TYPE C SOIL

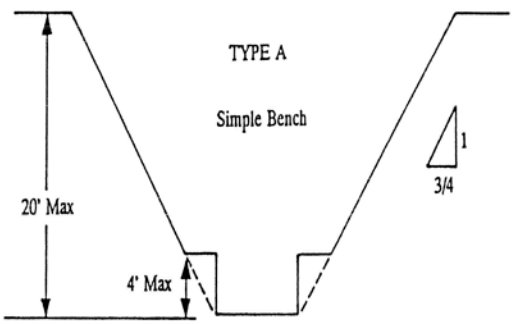
1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½:1.

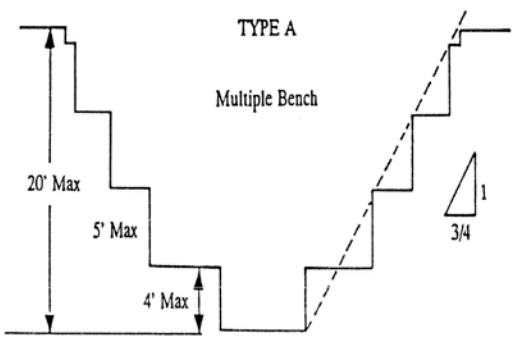


2. All other sloped excavations shall be in accordance with the other options permitted in 1926.652(b). (Ed note: This means from engineered data.)

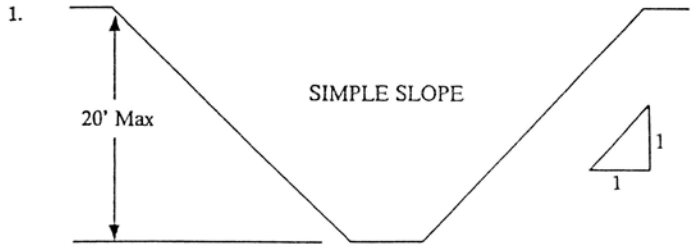
EXCAVATING IN TYPE B SOIL

All benched excavations 20 feet or less in depth shall have a maximum allowable slope of ¾ to 1 and maximum bench dimensions as follows:

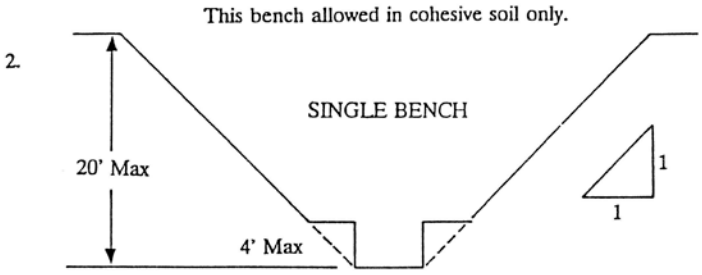


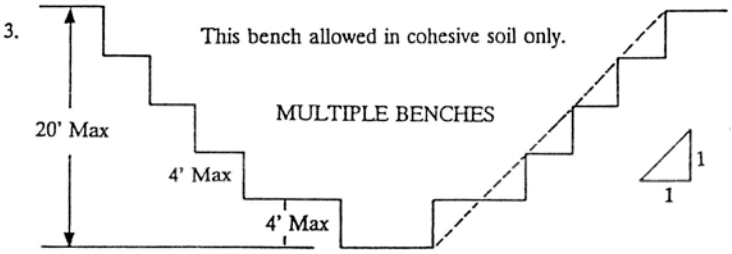


1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.



2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions as follows:





All other sloped excavations shall be in accordance with the other options permitted in 1926.652(b).

Timber Trench Shoring -- Minimum Timber Requirements *

Soil Type A Pa = 25 x H + 72 psf (2 ft. Surcharge)

Size (Actual) and Spacing of Members **															
Depth of Trench (feet)	Cross Braces							Whales		Uprights				
	Horiz. Spacing (feet)	Width of Trench (feet)					Vertical Spacing (feet)	Size (inches)	Vertical Spacing (feet)	Maximum Allowable Horizontal Spacing (feet)				
		Up to 4	Up to 6	Up to 9	Up to 12	Up to 15				Close	4	5	6	8
5 ft. to 10 ft.	Up to 6	4 x 4	4 x 4	4 x 6	6 x 6	6 x 6	4	Not Req'd	N/A				2 X 6	
	Up to 8	4 x 4	4 x 4	4 x 6	6 x 6	6 x 6	4	Not Req'd	N/A					2 X 8
	Up to 10	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4			2 X 6		
	Up to 12	4 x 6	4 x 6	6 x 6	6 x 6	6 x 6	4	8 x 8	4				2 X 6	
10 ft. to 15 ft.	Up to 6	4 x 4	4 x 4	4 x 6	6 x 6	6 x 6	4	Not Req'd	N/A				2 X 8	
	Up to 8	4 x 6	4 x 6	6 x 6	6 x 6	6 x 6	4	8 x 8	4		2 X 6			
	Up to 10	6 x 6	6 x 5	6 x 6	6 x 8	6 x 8	4	8 x 10	4			2 X 6		
	Up to 12	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	4	10 x 10	4				3 X 8	
15 ft. to 20 ft.	Up to 6	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	4	6 x 8	4	3 X 6				
	Up to 8	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	4	8 x 8	4	3 X 6				
	Up to 10	8 x 8	8 x 8	8 x 8	8 x 8	8 x 10	4	8 x 10	4	3 X 6				
	Up to 12	8 x 8	8 x 8	8 x 8	8 x 8	8 x 10	4	10 x 10	4	3 X 6				
Over 20 ft.	See Note 1													

* Mixed Oak or equivalent with a bending strength not less that 850 psi.
** Manufactured members of equivalent strength may be substituted for wood

Timber Trench Shoring -- Minimum Timber Requirements *

Soil Type B Pa = 45 x H + 72 psf (2 ft. Surcharge)

Size (Actual) and Spacing of Members **															
Depth of Trench (feet)	Cross Braces							Whales		Uprights				
	Horiz. Spacing (feet)	Width of Trench (feet)					Vertical Spacing (feet)	Size (inches)	Vertical Spacing (feet)	Maximum Allowable Horizontal Spacing (feet)				
		Up to 4	Up to 6	Up to 9	Up to 12	Up to 15				Close	2	3		
5 ft. to 10 ft.	Up to 6	4 x 6	4 x 6	6 x 6	6 x 6	6 x 6	5	6 x 8	5			2 X 6		
	Up to 8	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	5	8 x 10	5			2 X 6		
	Up to 10	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	5	10 x 10	5			2 X 6		
	See Note 1													
10 ft. to 15 ft.	Up to 6	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	5	8 x 8	5		2 X 6			
	Up to 8	6 x 8	6 x 8	6 x 8	8 x 8	8 x 8	5	10 x 10	5		2 X 6			
	Up to 10	8 x 8	8 x 8	8 x 8	8 x 10	8 x 10	5	10 x 12	5		2 X 6			
	See Note 1													
15 ft. to 20 ft.	Up to 6	6 x 8	6 x 8	6 x 8	8 x 8	8 x 8	5	8 x 10	5	3 X 6				
	Up to 8	8 x 8	8 x 8	8 x 8	8 x 8	8 x 10	5	10 x 12	5	3 X 6				
	Up to 10	8 x 10	8 x 10	8 x 10	8 x 10	10 x 10	5	12 x 12	5	3 X 6				
	See Note 1													
Over 20 ft.	See Note 1													

* Mixed Oak or equivalent with a bending strength not less that 850 psi.
** Manufactured members of equivalent strength may be substituted for wood.

Timber Trench Shoring -- Minimum Timber Requirements *

Soil Type C Pa = 80 x H + 72 psf (2 ft. Surcharge)

Size (Actual) and Spacing of Members **														
Depth of Trench (feet)	Cross Braces							Whales		Uprights				
	Horiz. Spacing (feet)	Width of Trench (feet)					Vertical Spacing (feet)	Size (inches)	Vertical Spacing (feet)	Maximum Allowable Horizontal Spacing (feet)				
		Up to 4	Up to 6	Up to 9	Up to 12	Up to 15				Close				
5 ft. to 10 ft.	Up to 6	6 x 8	6 x 8	6 x 8	8 x 8	8 x 8	5	8 x 10	5	2 x 6				
	Up to 8	8 x 8	8 x 8	8 x 8	8 x 8	8 x 10	5	10 x 12	5	2 x 6				
	Up to 10	8 x 10	8 x 10	8 x 10	8 x 10	10 x 10	5	12 x 12	5	2 x 6				
	See Note 1													
10 ft. to 15 ft.	Up to 6	8 x 8	8 x 8	8 x 8	8 x 8	8 x 10	5	10 x 12	5	2 x 6				
	Up to 8	8 x 10	8 x 10	8 x 10	8 x 10	10 x 10	5	12 x 12	5	2 x 6				
	See Note 1													
	See Note 1													
15 ft. to 20 ft.	Up to 6	8 x 10	8 x 10	8 x 10	8 x 10	10 x 10	5	12 x 12	5	3 X 6				
	See Note 1													
	See Note 1													
	See Note 1													
Over 20 ft.	See Note 1													

* Mixed Oak or equivalent with a bending strength not less that 850 psi.
** Manufactured members of equivalent strength may be substituted for wood.

Timber Trench Shoring -- Minimum Timber Requirements *

Soil Type A Pa = 25 x H + 72 psf (2 ft. Surcharge)

Size (Actual) and Spacing of Members **														
Depth of Trench (feet)	Cross Braces							Whales		Uprights				
	Horiz. Spacing (feet)	Width of Trench (feet)					Vertical Spacing (feet)	Size (inches)	Vertical Spacing (feet)	Maximum Allowable Horizontal Spacing (feet)				
		Up to 4	Up to 6	Up to 9	Up to 12	Up to 15				Close	4	5	6	8
5 ft. to 10 ft.	Up to 6	4 x 4	4 x 4	4 x 4	4 x 4	4 x 6	4	Not Req'd	Not Req'd				4 X 6	
	Up to 8	4 x 4	4 x 4	4 x 4	4 x 6	4 x 6	4	Not Req'd	Not Req'd					4 X 8
	Up to 10	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4			4 x 6		
	Up to 12	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4				4 X 6	
10 ft. to 15 ft.	Up to 6	4 x 4	4 x 4	4 x 4	6 x 6	6 x 6	4	Not Req'd	Not Req'd				4 x 10	
	Up to 8	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	6 x 8	4		4 x 6			
	Up to 10	6 x 6	6 x 6	6 x 6	6 x 6	6 x 8	4	8 x 8	4			4 x 8		
	Up to 12	6 x 6	6 x 6	6 x 6	6 x 6	6 x 6	4	8 x 10	4		4 x 6		4 x 10	
15 ft. to 20 ft.	Up to 6	6 x 6	6 x 6	6 x 6	6 x 6	6 x 6	4	6 x 8	4	3 X 6				
	Up to 8	6 x 6	6 x 6	6 x 6	6 x 6	6 x 6	4	8 x 8	4	3 X 6	4 x 12			
	Up to 10	6 x 6	6 x 6	6 x 6	6 x 6	6 x 8	4	8 x 10	4	3 X 6				
	Up to 12	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	4	8 x 12	4	3 X 6	4 x 12			
Over 20 ft.	See Note 1													

* Douglas fir or equivalent with a bending strength not less than 1500 psi.
** Manufactured members of equivalent strength may be substituted for wood.

Timber Trench Shoring -- Minimum Timber Requirements *

Soil Type B Pa = 45 x H + 72 psf (2 ft. Surcharge)

Size (Actual) and Spacing of Members **														
Depth of Trench (feet)	Cross Braces							Whales		Uprights				
	Horiz. Spacing (feet)	Width of Trench (feet)					Vertical Spacing (feet)	Size (inches)	Vertical Spacing (feet)	Maximum Allowable Horizontal Spacing (feet)				
		Up to 4	Up to 6	Up to 9	Up to 12	Up to 15				Close	2	3	4	6
5 ft. to 10 ft.	Up to 6	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	5	6 x 8	5			3 x12 4 x 8		4 x 12
	Up to 8	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	5	8 x 8	5		3 x 8		4 x 8	
	Up to 10	4 x 6	4 x 6	4 x 6	6 x 6	6 x 8	5	8 x 10	5			4 x 8		
	See Note 1													
10 ft. to 15 ft.	Up to 6	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	5	8 x 8	5	3 x 6	4 x 10			
	Up to 8	6 x 8	6 x 8	6 x 6	8 x 8	8 x 8	5	10 x 10	5	3 x 6	4 x 10			
	Up to 10	6 x 8	6 x 8	8 x 8	8 x 8	8 x 8	5	10 x 12	5	3 x 6	4 x 10			
	See Note 1													
15 ft. to 20 ft.	Up to 6	6 x 8	6 x 8	6 x 8	6 x 8	8 x 8	5	8 x 10	5	4 x 6				
	Up to 8	6 x 8	6 x 8	6 x 8	8 x 8	8 x 8	5	10 x 12	5	4 x 6				
	Up to 10	8 x 8	8 x 8	8 x 8	8 x 8	8 x 8	5	12 x 12	5	4 x 6				
	See Note 1													
Over 20 ft.	See Note 1													

* Douglas fir or equivalent with a bending strength not less than 1500 psi.
** Manufactured members of equivalent strength may be substituted for wood.

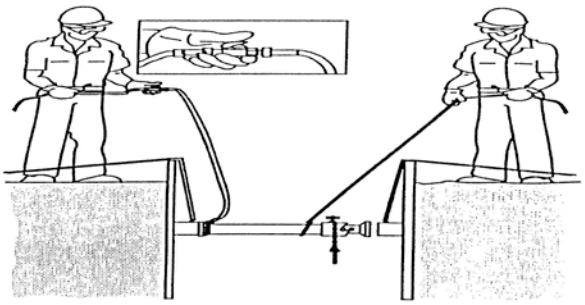
Timber Trench Shoring -- Minimum Timber Requirements *

Soil Type C Pa = 80 x H + 72 psf (2 ft. Surcharge)

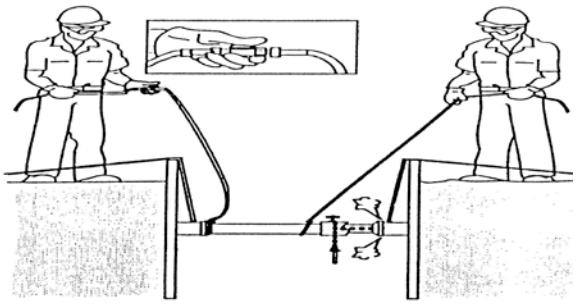
Size (Actual) and Spacing of Members **														
Depth of Trench (feet)	Cross Braces							Whales		Uprights				
	Horiz. Spacing (feet)	Width of Trench (feet)					Vertical Spacing (feet)	Size (inches)	Vertical Spacing (feet)	Maximum Allowable Horizontal Spacing (feet) (See Note 2)				
		Up to 4	Up to 6	Up to 9	Up to 12	Up to 15				Close				
5 ft. to 10 ft.	Up to 6	6 x 6	6 x 6	6 x 6	6 x 6	8 x 8	5	8 x 10	5	3 x 6				
	Up to 8	6 x 6	6 x 6	6 x 6	8 x 8	8 x 8	5	10 x 10	5	3 x 6				
	Up to 10	6 x 6	6 x 6	8 x 8	8 x 8	8 x 8	5	10 x 12	5	3 x 6				
	See Note 1													
10 ft. to 15 ft.	Up to 6	6 x 8	6 x 8	6 x 8	8 x 8	8 x 8	5	10 x 10	5	4 x 6				
	Up to 8	8 x 8	8 x 8	8 x 8	8 x 8	8 x 8	5	12 x 12	5	4 x 6				
	See Note 1													
	See Note 1													
15 ft. to 20 ft.	Up to 6	8 x 8	8 x 8	8 x 8	8 x 10	8 x 10	5	10 x 12	5	4 X 6				
	See Note 1													
	See Note 1													
	See Note 1													
Over 20 ft.	See Note 1													

* Douglas fir or equivalent with a bending strength not less than 1500 psi.
** Manufactured members of equivalent strength may be substituted for wood.

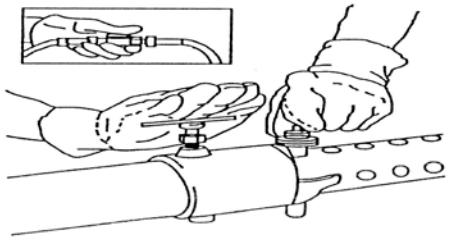
AIRSHORE INSTALLATION



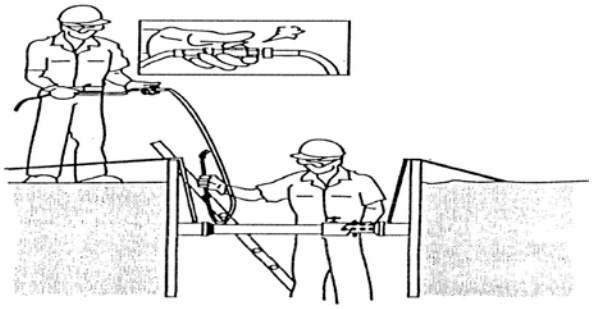
Position In Trench



Activate Pressure



Insert Pin
Lock Out Collar



Release Pressure
Remove Coupler

AIRSHORE SAFETY LIMIT TABLE
C-1 (OAK TIMBER)

FOR USE IN EXCAVATIONS SHORED IN ACCORDANCE WITH
THE DEPARTMENT OF LABOR
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CONSTRUCTION INDUSTRY STANDARD - SUBPART P OF PART 1926

SOIL TYPE	DEPTH OF TRENCH	WIDTH OF TRENCH	MAXIMUM HORIZONTAL SPACING (Feet)	MAXIMUM VERTICAL SPACING (Feet)
A	Over 5	Up to 6	12	4
	Up to 10	6 to 12	6	4
	Over 10	Up to 6	12	4
	Up to 15	6 to 12	6	4
	Over 15	Up to 6	6	4
		6 to 9	4.5	4
	Up to 20	9 to 12	4	4
B	Over 5	Up to 6	8	4
	Up to 10	6 to 12	6	4
	Over 10	Up to 6	6	4
	Up to 15	6 to 12	5	4
	Over 15	Up to 6	5	4
		6 to 9	4	4
	Up to 20	9 to 12	3.5	4
C	Over 5	Up to 6	8	4
	Up to 10	6 to 12	6	4
	Over 10	Up to 6	6	4
	Up to 15	6 to 12	4	4
	Over 15	Up to 6	4	4
		6 to 9	3	4
	Up to 20	9 to 12	2.75	4

USERS ARE ADVISED TO ALWAYS CHECK LOCAL SHORING AND SAFETY REQUIREMENT

OSHA REFERENCES

Soil classifications -- Refer to Appendix A of Subpart P of Part 1926
Timber requirements -- Refer to Tables C-1.1, C-1.2, C-1.3 of Appendix C of Subpart P of Part 1926
Shoring Configurations Deviating from this Table are not allowed unless in accordance with the requirements of Part 1926.652

AIRSHORE SAFETY LIMIT TABLE
C-2 (DOUGLAS FIR)

FOR USE IN EXCAVATIONS SHORED IN ACCORDANCE WITH
THE DEPARTMENT OF LABOR
OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CONSTRUCTION INDUSTRY STANDARD - SUBPART P OF PART 1926

SOIL TYPE	DEPTH OF TRENCH	WIDTH OF TRENCH	MAXIMUM HORIZONTAL SPACING (Feet)	MAXIMUM VERTICAL SPACING (Feet)
A	Over 5	Up to 6	12	4
	Up to 10	6 to 12	8	4
	Over 10	Up to 6	12	4
	Up to 15	6 to 12	8	4
	Over 15	Up to 6	8	4
	Up to 20	6 to 12	6	4
B	Over 5	Up to 6	10	4
	Up to 10	6 to 12	8	4
	Over 10	Up to 6	6	4
	Up to 15	6 to 12	5	4
	Over 15	Up to 6	6	4
		6 to 9	5	4
	Up to 20	9 to 12	4	4
C	Over 5	Up to 6	8	4
	Up to 10	6 to 12	6	4
	Over 10	Up to 6	6	4
	Up to 15	6 to 12	4	4
	Over 15	Up to 6	4	4
	Up to 20	6 to 12	3	4

USERS ARE ADVISED TO ALWAYS CHECK LOCAL SHORING AND SAFETY REQUIREMENTS

OSHA REFERENCES

Timber requirements -- Refer to Tables C-2.1, C-2.2, C-2.3 of Appendix C of Subpart P of Part 1926
Soil Classifications -- Refer to Appendix A of Subpart P of Part 1926

Shoring configurations deviating from this Table are not allowed unless in accordance with the requirements of Part 1926.652.

January 10th, 1990

Aluminum Hydraulic Shoring
Typical Installations

Figure No. 1

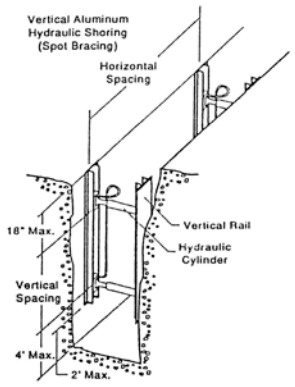


Figure No. 2

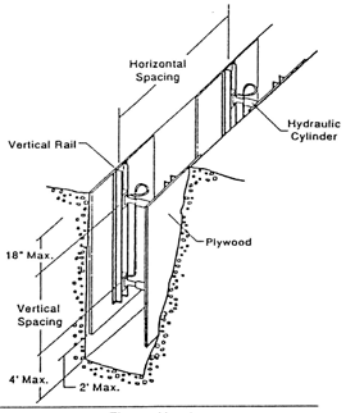


Figure No. 3

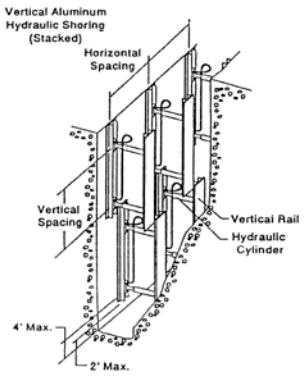
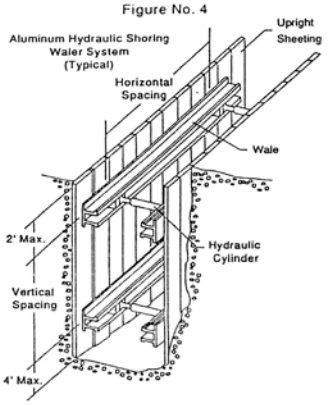
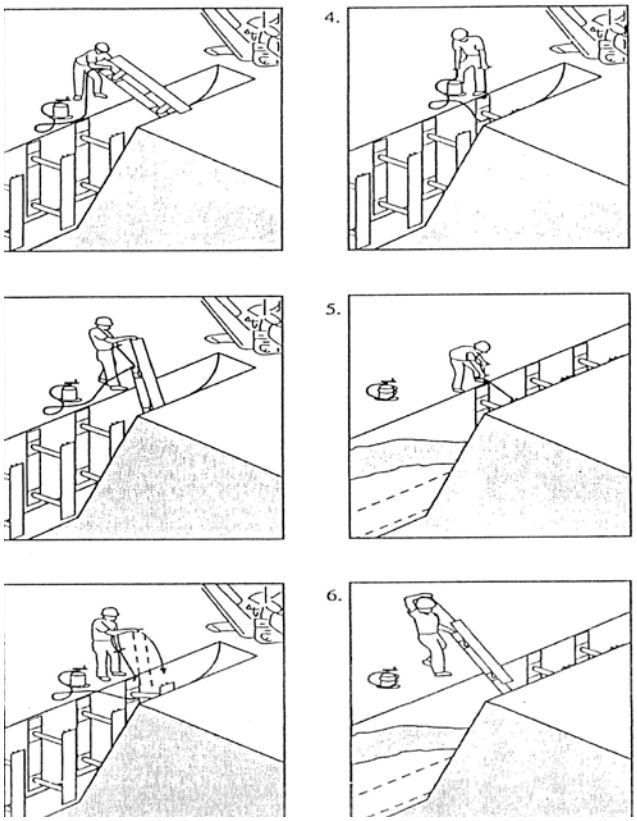


Figure No. 4



Installation of a Vertical Shore



Aluminum Hydraulic Shoring
Vertical Shores
For Soil Type A

Depth of Trench (feet)	Hydraulic Cyclinders				
	Maximum Horizontal Spacing (feet)	Maximum Vertical Spacing (feet)	Width of Trench (feet)		
			Up to 8	Over 8 & Up to 12	Over 12 & Up to 15
Over 5 and Up to 10	8	4	2 inch Diameter	2 inch Diameter Note (2)	3 inch Diameter
Over 10 and Up to 15	8				
Over 15 and Up to 20	7				
Over 20	Note (1)				

Footnotes to tables, and in general notes on hydraulic shoring, are found in Appendix D, Item (g).
Note (1): See Appendix D, Item (g)(1)
Note (2): See Appendix D, Item (g)(2)

Aluminum Hydraulic Shoring
Vertical Shores
For Soil Type B

Depth of Trench (feet)	Hydraulic Cyclinders				
	Maximum Horizontal Spacing (feet)	Maximum Vertical Spacing (feet)	Width of Trench (feet)		
			Up to 8	Over 8 & Up to 12	Over 12 & Up to 15
Over 5 and Up to 10	8	4	2 inch Diameter	2 inch Diameter Note (2)	3 inch Diameter
Over 10 and Up to 15	6.5				
Over 15 and Up to 20	5.5				
Over 20	Note (1)				

Footnotes to tables, and in general notes on hydraulic shoring, are found in Appendix D, Item (g).
Note (1): See Appendix D, Item (g)(1)
Note (2): See Appendix D, Item (g)(2)

Aluminum Hydraulic Shoring
Waler Systems
For Soil Type B

Depth of Trench (feet)	Whales		Hydraulic Cylinders						Timber Uprights		
			Width of Trench (feet)						Max. Horiz.Spacing		
			Up to 8		Over 8 & Up to 12		Over 12 & Up to 15				
	Vertical Spacing (feet)	Section Modulus (cu. in)	Horiz. Spacing	Cylinder Diameter	Horiz. Spacing	Cylinder Diameter	Horiz. Spacing	Cylinder Diameter	Solid Sheet	2 Ft.	3 Ft.
Over 5 & Up to 10	4	3.5	8.0	2 in.	8.0	2 in. Note (2)	8.0	3 in.			3 x 12
		7.0	9.0	2 in.	9.0	2 in. Note (2)	9.0	3 in.			
		14.0	12.0	3 in.	12.0	3 in.	12.0	3 in.			
Over 10 & Up to 15	4	3.5	6.0	2 in.	6.0	2 in. Note (2)	6.0	3 in.		3 x 12	
		7.0	8.0	3 in.	8.0	3 in.	8.0	3 in.			
		14.0	10.0	3 in.	10.0	3 in.	10.0	3 in.			
Over 15 & Up to 20	4	3.5	5.5	2 in.	5.5	2 in. Note (2)	5.5	3 in.	3 x 12		
		7.0	6.0	3 in.	6.0	3 in.	6.0	3 in.			
		14.0	9.0	3 in.	9.0	3 in.	9.0	3 in.			
Over 20	Note (1)										

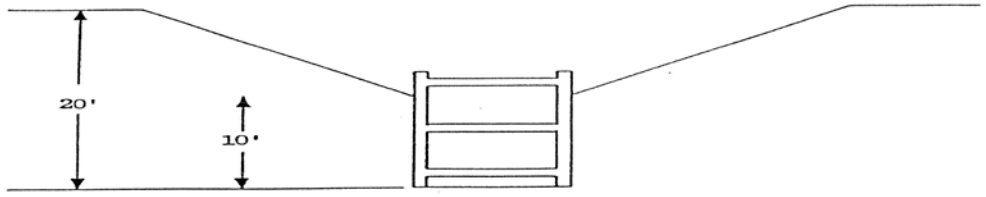
Footnotes to tables, and general notes on hydraulic shoring, are found in Appendix D, Item (g)
Note(1): See Appendix D, Item (g)(1)
Note(2): See Appendix D, Item (g)(2)
* Consult product manufacturer and/or qualified engineer for Section Modulus of available wales.

Aluminum Hydraulic Shoring
Waler Systems
For Soil Type C

Depth of Trench (feet)	Whales		Hydraulic Cylinders						Timber Uprights		
			Width of Trench (feet)						Max. Horiz.Spacing		
			Up to 8		Over 8 & Up to 12		Over 12 & Up to 15				
	Vertical Spacing (feet)	Section Modulus (cu. in)	Horiz. Spacing	Cylinder Diameter	Horiz. Spacing	Cylinder Diameter	Horiz. Spacing	Cylinder Diameter	Solid Sheet	2 Ft.	3 Ft.
Over 5 & Up to 10	4	3.5	6.0	2 in.	6.0	2 in. Note (2)	6.0	3 in.			
		7.0	6.5	2 in.	6.5	2 in. Note (2)	6.5	3 in.	3 x 12		
		14.0	10.0	3 in.	10.0	3 in.	10.0	3 in.			
Over 10 & Up to 15	4	3.5	4.0	2 in.	4.0	2 in. Note (2)	4.0	3 in.			
		7.0	5.5	3 in.	5.5	3 in.	5.5	3 in.	3 x 12		
		14.0	8.0	3 in.	8.0	3 in.	8.0	3 in.			
Over 15 & Up to 20	4	3.5	3.5	2 in.	3.5	2 in. Note (2)	3.5	3 in.			
		7.0	5.0	3 in.	5.0	3 in.	5.0	3 in.	3 x 12		
		14.0	6.0	3 in.	6.0	3 in.	6.0	3 in.			
Over 20	Note (1)										

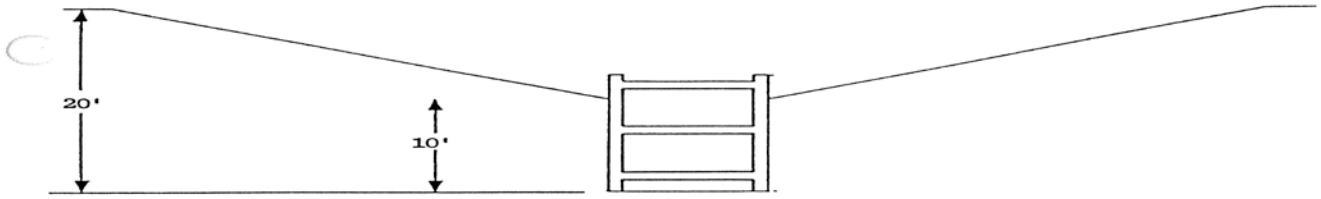
Footnotes to tables, and general notes on hydraulic shoring, are found in Appendix D, Item (g)
Note(1): See Appendix D, Item (g)(1)
Note(2): See Appendix D, Item (g)(2)
* Consult product manufacturer and/or qualified engineer for Section Modulus of available wales.

SLOPING AND SHORING



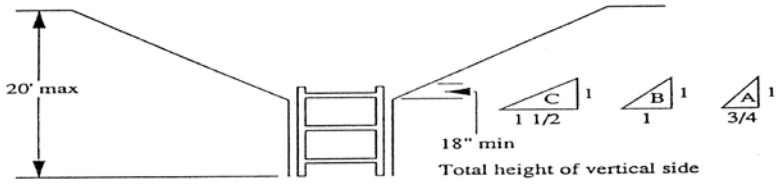
If the lower section is shored as though it were 20 feet deep (actual depth), the upper section may be sloped according to the ratio assigned its type by the standard.

If the lower section is shored as though it were only 10 feet deep (not actual depth), the upper section must be sloped 3 (three) horizontal to 1 (one) vertical.

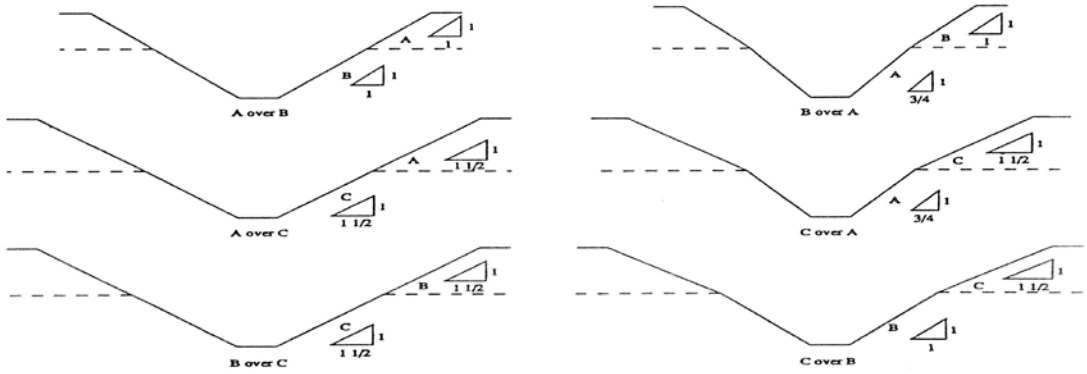


SLOPING AND SHIELDING

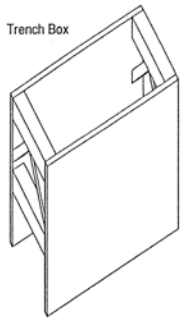
All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at least 18 inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1 for Type C, 1:1 for Type B and ¾:1 for Type A.

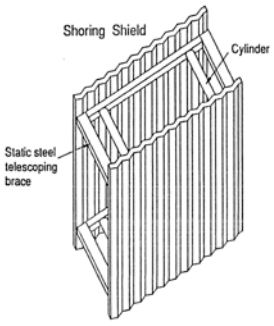


Sloping of Layered Soils of Different Types



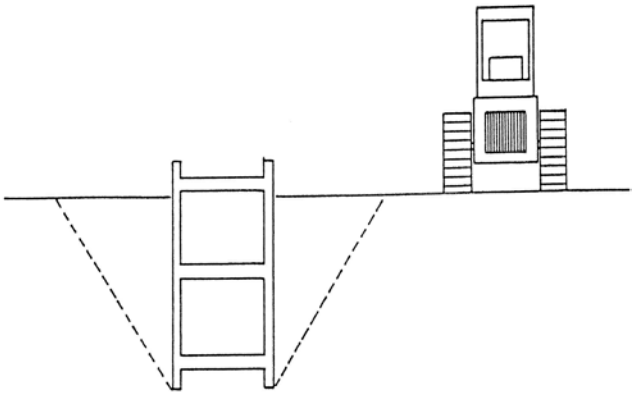
SHIELDING

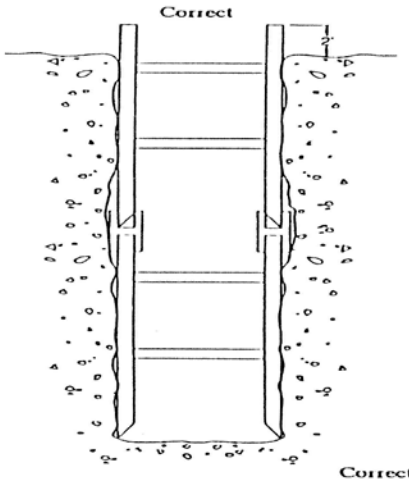




EQUIPMENT SURCHARGE LOAD LIMIT

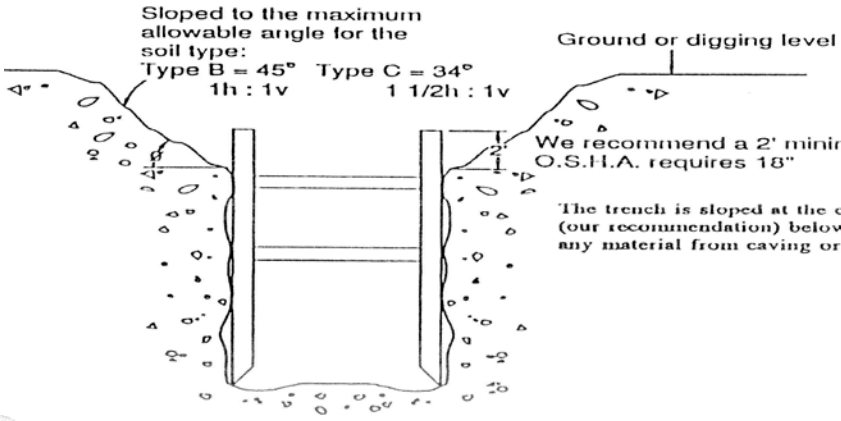
The standard limits the surcharge load limit from equipment to 20,000 pounds when using the timber or aluminum hydraulic shoring charts in appendices C & D. How close can you bring the equipment safely? An engineer can specify changes in the shoring to accommodate the increased weight or the competent person can keep the equipment which weighs over 20,000 pounds back past the point to which he or she would slope the excavation for the soil type present if he or she were using the sloping method.





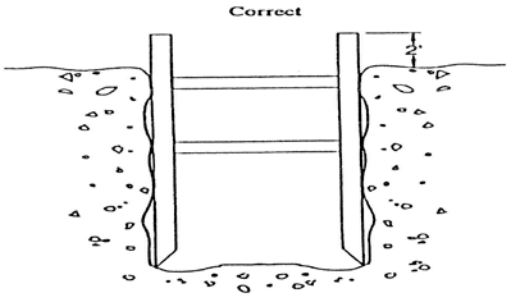
Some shields can be stacked and pinned together, according to manufacturers' specifications. There should be little or no space between the trench walls and the shields to prevent side-shifting in the event of a cave-in. The top of the shield should extend two feet above the top of the excavation (our recommendation) or the trench should be sloped to a point two feet (our recommendation; OSHA says 18 inches) below the top of the shield as below.

Correct combination of trench shield and sloping

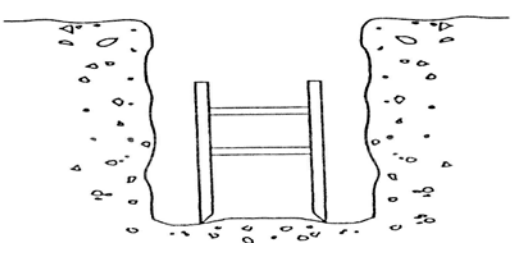


The trench is sloped at the correct angle to a point two feet (our recommendation) below the top of the shield to prevent any material from caving or rolling into it.

SHIELD INSTALLATIONS



The shield fits the excavation snugly. Lateral displacement (side shifting) cannot occur. The top of the shield should extend about two feet above the top of the trench to prevent material from rolling or falling into the shield. (This is our recommendation, not OSHA's requirement. OSHA only requires that the shield reach the top of the excavation.)



The box does not extend above the top of the trench.

The trench is not sloped at the correct angle to a point two feet below the top of the shield. (Two feet is our recommendation; OSHA requires 18 inches.)

There is too much space between the shield and the trench walls. Side shifting would occur in the event of a cave-in.

Effective Date: 07/01/99
Revision Date: 04/09/09

FIRE PROTECTION AND SAFETY

In the event of a fire it is essential to the safety and survival of everyone to have clearly defined instructions to follow. This policy describes these procedures for the City of Bryan. The primary responsibility of employees is for the safety and well being of all employees and citizens. If a fire occurs, the first response will be to turn in an alarm to 911 and start evacuation. Fire suppression should only be attempted after those measures are in place and only if the fire is isolated to a small area and efforts with a fire extinguisher have a high probability of extinguishing the fire.

PROCEDURES

1. The City of Bryan shall familiarize each employee with the emergency exits, alarm signals and escape procedures.
2. All fire exits and escape routes shall be visibly marked and will be kept free of obstructions.
3. Fire exits or doors shall not be locked, chained or barricaded at any time.
4. Employees shall be familiarized with the location and operation of all fire protection equipment in their area.
5. The City of Bryan shall assure that the servicing, maintenance, and testing of fire alarms and fire detection systems is done by trained personnel.
6. The City of Bryan shall train designated employees in the operation and use of extinguishers and the maintenance and operation of fire extinguishing systems.

EVACUATION PLANS

All City of Bryan facilities shall have an evacuation plan that shall be posted in a visible area. Each employee shall familiarize themselves with the posted evacuation plan. Evacuation plans should be practiced at announced intervals to promote familiarity and reduce confusion.

FIRE EXTINGUISHERS

All fire extinguishers will be conspicuously marked. Extinguishers will be located close to a fire hazard but not so close that they could be damaged or cut off by a fire. The following general guidelines should be followed when using portable fire extinguishers. Be sure that:

1. You know how to use an extinguisher.
2. The fire is small, confined, and not spreading.
3. You have an unobstructed escape route.
4. You keep your back to the exit and stand 6 to 8 feet away from the fire.
5. Your extinguisher matches the fire.
6. You are efficient. Most fire extinguishers are emptied in a few seconds.

To operate your extinguisher, remember the acronym “PASS.”

1. P – Pull the pin that unlocks the operating lever.
2. A – Aim low at the base of the fire.
3. S – Squeeze the lever to discharge the extinguishing agent.
4. S – Sweep the nozzle from side to side, moving carefully forward.

Class	Burning Characteristics	Extinguishing Agents
“A”	Wood, Paper, Textiles, and some plastics	Water, Multipurpose Dry Chemicals, High-Expansion Foams and Halon
“B”	Flammable Liquid and Gas Fires (i.e. oil, gasoline, paint, grease)	Carbon Dioxide, Dry Chemical, Low-Expansion Foam and Halon
“C”	Energized Electrical Equipment	Carbon Dioxide, Dry Chemical and Halon
“D”	Combustible Metals (i.e. Magnesium, Potassium, Zinc, Titanium)	Dry Powder

Effective Date: 07/01/99
Revision Date: 03/12/09

HAZARD COMMUNICATION

As an employer, the City of Bryan, must comply with the requirements of the Texas Hazard Communication Act (Art. 5162b, Texas Revised Civil Statutes). This act requires employers to train and educate employees on the safe use and handling of hazardous materials which employees may be exposed to in the workplace.

The objective of the City's Hazard Communication Program is to provide information and training so employees may work safely with hazardous chemicals found in the workplace. Employees have the responsibility to adhere to instructions on safe use, handling and disposal of hazardous materials.

DEFINITIONS

Safety Coordinator - Department directors, division managers or their designated representative will act as the division's Hazard Communication/Safety Coordinator. Although a manager may designate a coordinator, the manager is responsible for assuring the requirements of the act are met.

Written Program – The written program is a City of Bryan document that defines the specific requirements of the Texas Hazard Communication Act in addition to providing sample lists, notices, labels and material safety data sheets.

Affected Employees - Management and office workers not exposed to hazardous chemicals in performance of their work duties are exempt from this program. However, it is the City's policy to have all new employees attend Hazardous Communication Training Level one (HCT 1) at new employee orientation.

Material Safety Data Sheet (MSDS) – A document containing chemical hazard and safe handling information that is prepared in accordance with the requirements of the federal Occupational Safety and Health Administration (OSHA) standard for that document.

Hazard Communication Manual – A binder, preferably yellow, with "MSDS" or "Hazard Communication Program" clearly marked on the outside. All MSDS and Hazard Communication Program materials will be kept in this binder.

EXEMPTIONS

Exempt Chemicals as defined by the Hazard Communication Act:

- Hazardous waste as defined by the Solid Waste Disposal Act;
- Tobacco or tobacco products;
- Wood or wood products;
- Any article that is formed to a specific shape or design during manufacture, that has end-use functions dependent in whole or in part on its shape or design during end-use,

and that does not release or otherwise result in exposure to a hazardous chemical under normal conditions of use;

- Food, drugs, cosmetics or alcoholic beverages in retail establishments that are packaged for sale to consumers;
- Food, drugs or cosmetics intended for personal consumption or use by employees while in the workplace;
- Any consumer product hazardous substance when subject to the product labeling regulations of the Consumer Product Safety Act;
- Any drug as is defined in the Federal Drug and Cosmetic Act when it is in solid, final form for direct administration to the patient (i.e. tablets or pills);
- Products pursuant to the Federal Insecticide, Fungicide and Rodenticide Act; and
- Radioactive wastes.

PROGRAM MANAGEMENT

Distribution of Written Program

A copy of the written Hazard Communication Program shall be kept at the offices of the Risk Management Department and in the workplace Hazard Communication Manual of each division that handles hazardous chemicals.

Employee Comments

If, at any time, employees have any questions or concerns about the Hazard Communication Program, they are encouraged to submit their comments in writing to their immediate supervisor and/or the Risk Management Department. Comments shall be evaluated and appropriate action shall be taken, if necessary.

Risk Management duties

Risk Management shall oversee the Hazard Communication Program and have the authority to modify and change the policy as needed to meet state and federal requirements. Risk Management shall be responsible for and have authority to assure compliance with the requirements of the act as well as these specific duties:

1. Conduct training for new hires;
2. Assure all training is documented and records are maintained; and
3. Conduct compliance audits.
4. Risk Management shall have the authority to carry out written requirements of the policy and is responsible for filing all hazardous chemical reports with the appropriate government agency.

Duties of all Divisions

1. Obtain Material Safety Data Sheets (MSDS) for chemicals requisitioned through their Division;
2. Verify that all containers delivered to or stored are properly labeled; and
3. Include the requirement to comply with the Texas Hazard Communication Act in all specifications for contractual services.

Safety Coordinator duties

1. Maintain a copy of the City's Hazard Communication Program, Hazardous Chemical Lists and Material Safety Data Sheets (MSDS) specific for each workplace and assure they are readily available for review by all employees during each work shift;
2. Compile an alphabetical listing by chemical name or common name of all hazardous chemicals present in the workplace regardless of the amount; place the list in the Hazard Communication Manual;
3. Post Notice of the Hazardous Communication Act in each workplace;
4. Provide new employees with training before employees are exposed to or handle any hazardous chemicals;
5. Provide at least annual education and training programs for employees in hazardous chemical use; records of training shall be forwarded to Risk Management;
6. Obtain Material Safety Data Sheets for all chemicals prior to their use; and
7. Verify that containers of hazardous chemicals are properly labeled.

Employee duties

1. Practice safe work habits. Obey the rules and never take shortcuts when handling, using, storing or transporting hazardous chemicals;
2. Learn to use chemicals properly and understand what they do;
3. Use personal protective equipment (PPE). Make sure it fits properly. Follow instruction for cleaning and storing PPE and replace damaged articles promptly;
4. Know emergency procedures; keep first aid supplies on hand and learn emergency eyewash and shower procedures;
5. Notify supervisor of containers that are incorrectly labeled;
6. Notify supervisor if containers are damaged;
7. Notify supervisor immediately of all chemical spills; and
8. Notify supervisor if chemical smells or appears unusual.

HAZARD IDENTIFICATION

Container Labeling

The safety coordinator shall verify that all chemical containers received for use and all chemical containers currently in use in each workplace have the following information:

1. Product identity, including the hazardous chemical ingredient name;
2. Hazard warning (i.e. Danger-Warning-Caution, including statement which describes health or physical hazards of the product or "target organ" information as a health warning); and
3. Name and address of chemical manufacturer, distributor, importer or responsible party.

Example Labels

The safety coordinator is responsible for verifying all containers delivered to or currently at the work site are labeled correctly. No containers will be released for use until this data is verified. All labels and information shall be written in English.

If a hazardous chemical label is missing or improper, corrective action shall be taken immediately by the safety coordinator. In addition, employees shall be trained to report

immediately to their supervisor if a container is found with inadequate labeling so that corrective action can be taken. Under no circumstances shall labeling be removed or covered while any hazardous material remains in the container.

Acetone **CAS No. 67-64-1** **Physical Hazard:** Flammable, Explosive **Health Hazard:** Eye & Skin Irritant, **Target organs:** Lung Consult Material Safety Data Sheet before using.	**Benzene** **CAS No. 71-43-2** **Physical Hazard:** Flammable **Health Hazard:** Carcinogen, Irritant: **Target Organs:** Blood Skin Liver Consult Material Safety Data Sheet before using.

Industrial Facility Piping
Prior to any work commencing in areas that have unlabeled pipes, the supervisor in charge of the work must contact the appropriate division manager and must have information regarding the contents of the pipes. If hazardous chemicals run through the pipes, the potential hazards and necessary safety precaution relative to the chemicals must be obtained and given to the employees working in the area.

Every effort will be made to label and identify pipes that carry materials that could be hazardous. Labeling must contain specific markings identifying the contents in pipes.

Portable Containers
If, for any reason, an unlabeled container such as a bucket is used to temporarily store or transport a hazardous chemical, it shall only be used by the employee who performs the transfer and shall only be used during the shift of work during which the transfer was made.

Reuse of Empty Containers
Any empty container being considered for reuse must be fully cleaned and all labels removed prior to its reuse.

MATERIAL SAFETY DATA SHEETS (MSDS)

Obtaining Material Safety Data Sheets
The safety coordinator shall be responsible for obtaining MSDS's for chemicals purchased by the division. When Material Safety Data Sheets are received, they shall be forwarded to the safety coordinator. Copies of Material Safety Data Sheets will be made available to employees upon request to the safety coordinator.

Relaying Material Safety Data Sheet Information
MSDS information for hazardous chemicals to be used in the workplace must be obtained and relayed to the employees who will be working with the chemical before it is put into use. Each newly assigned employee must be given the information on the chemical

before being allowed or required to work with the chemical. Revised MSDS's must be reviewed with employees.

Location of Workplace Material Safety Data Sheets
MSDS's for all hazardous chemicals used in the workplace shall be kept in the workplace's Hazard Communication Manual and be readily available for review by employees during each work shift.

EMPLOYEE TRAINING REQUIREMENTS

It is the responsibility of the Risk Management Department and the division managers to safely maintain training records.

The division shall record all hazard communication training and forward this record to the Risk Management Department for retention within 4 weeks of the date that the training occurred.

Employees shall receive information on the City of Bryan's Hazard Communication Program and training to protect their health and safety. Information and training shall be provided based on job responsibility and risk. Employees may receive up to four levels of instruction, depending on the job and the risk. These levels range from basic program information to hands-on material handling training.

The method and level of training will vary with the needs of each division depending upon the hazardous chemicals and the job duties of employees. Each division shall furnish training on the nature and effect of hazardous chemicals used by the employees. Each affected division shall also provide access to information for other hazardous chemicals within the employee's workplace.

Training shall be in non-technical language and may be generic to the extent appropriate. The training program shall be designed to ensure an appropriate level of understanding by all employees.

Employees shall be given refresher training on an annual basis. Newly assigned employees shall be given the required training before they begin work with or near hazardous chemicals. Training shall also be conducted before any new hazard is introduced into the workplace.

The Hazard Communication Training (HCT) program is structured into four modules, identified below. Risk Management will present HCT 1 at new employee orientation. Each division shall develop and implement training modules HCT 2, HCT 3 and HCT 4 utilizing the guidelines established in this program.

HCT 1
This is a general orientation and training program. Topics to be discussed and explained shall include:

- The Texas Hazard Communication Act and the City's Hazard Communication Program;
- Chemical inventory and labeling requirements and interpretation;
- MSDS interpretation and accessibility;
- Methods to protect from exposure; and
- Generic chemical training (training by categorizing chemicals according to chemical class and health effects).

HCT 2
Instruction in this next level of training can be done in a group setting and shall include, at a minimum, training and/or instructions pertaining to each hazardous chemical used by an employee. This must include the following subjects:

- Interpreting labels and MSDS's;
- Target organs, acute and chronic effects;
- Proper handling techniques;
- Personal protective equipment and first aid treatment;
- Procedures for dealing with spills and other abnormal releases of the chemical; and
- Clean up and disposal procedures.

HCT 3
HCT 3 will include everything done in HCT 2 plus the additional requirement that the MSDS be discussed with each individual employee for each hazardous chemical that the employee uses by either the employee's supervisor or the safety coordinator.

HCT 4
Special instructions shall be given anytime the chemical is used in a confined space entry or a non-routine task. Special instructions shall also be given anytime that an employee uses a chemical on the extremely hazardous chemical list.

WORKPLACE HAZARDOUS CHEMICAL REPORT (TIER TWO)

On an annual basis, the safety coordinator shall also update the division's Hazardous Chemical Report (Tier Two) according to requirements of the Texas Hazard Communication Act. This report is for any hazardous chemicals kept on site in quantities over 500 gallons or 2000 pounds. The report also includes any chemicals on the "extremely hazardous chemicals" list as provided by the Texas Department of Health.

INFORMING CONTRACTORS

Before a contractor commences work, the manager who controls the workplace will be responsible for:
Informing the contractor of his or her rights under the Act;
Providing a copy of the chemical report to which the contractor, his or her employees and agents may be exposed to in the City workplace;
Providing copies of all MSDS's for the hazardous chemicals which they may be exposed to in the workplace;
Informing the contractor of his or her obligation to inform his or her employees and agents of each of the above requirements;
Assuring the contractor provides MSDS's for any hazardous chemical they will be bringing into a City workplace that City employees will have exposure to; and
Assuring the contractor has signed a contract containing general provisions which includes a statement that the contractor acknowledges the receipt of the City Hazard Communication Policy and by signature agrees to the terms of the policy.

Effective Date: 07/01/99
Revision Date: 08/12/10

INFECTION CONTROL BLOODBORNE DISEASE

The City of Bryan strives to maintain a safe working environment for its employees with regard to occupational exposure to Bloodborne Pathogens. The safe performance of daily operations in some positions may be threatened by life-endangering communicable diseases. Human Immunodeficiency Virus (HIV), Hepatitis B Virus, Hepatitis C Virus and other Bloodborne Pathogens continue to be prevalent in society and thus continue to pose risks to many employees in the discharge of their duties.
In accordance with Texas Administrative Code Title 25, Part 1, §96.101- §96.501, and analogous to OSHA Blood borne Pathogens Standard at 29 CFR 1910.1030, the following exposure control plan exists. The foundation of this policy is in Texas Health and Safety Code, Chapter 81, Subchapter H.

DEFINITIONS

Bloodborne pathogens – Pathogenic microorganisms that are present in human blood and can cause disease in humans.

Bodily fluids – Liquid secretions from the body including, but not limited to, blood, saliva, vomit, urine and feces.

Chemical disinfection – The use of a chemical agent to significantly reduce the numbers of active microorganisms, but not necessarily their endospores, from the surfaces of objects.

Communicable disease – Those infectious illnesses that are transmitted through direct or indirect contact with an infected individual.

Contaminated – The presence or the reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Contaminated sharps - Any contaminated object that can penetrate the skin including, but not limited to, needles and broken glass.

Exposure incident – A specific eye, mouth, mucous membrane, non-intact skin or piercing skin contact with blood or other potentially infectious material that results from the performance of an employee's duties.

Emergency care provider – The facility that provides emergency care to employees of the City of Bryan.

Hand washing facilities – A facility that provides an adequate supply of running water, soap and single use towels or hot air drying machines

HBV – Hepatitis B, a DNA viral disease of the liver, normally transmitted through bodily fluids.

HCV – Hepatitis C, an RNA viral disease of the liver, normally transmitted through bodily fluids.

HIV – Human Immunodeficiency Virus, is a lentivrus that causes Acquired ImmunoDeficiency Syndrome (AIDS) normally transmitted through bodily fluids.

Occupational exposure – Reasonably anticipated skin, eye, mucous membrane or skin piercing contact with blood or other potentially infectious material that may result from the performance of an employee's duties.

Occupational health clinic – The facility that provides non-emergency care to employees of the City of Bryan.

Personal Protective Equipment (PPE) – Specialized clothing or equipment worn by an individual for protection from a hazard. Some examples are gloves, laboratory coats, faceshields, masks and breathing barriers.

Receiving facility – The initial facility where medical treatment is received.

Source – An individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee.

Universal precautions – An approach to infection control which reduces the risk of exposure by standardizing the manner in which a task is performed.

APPLICABILITY

These minimum standards apply to the City of Bryan as a governmental unit with employees who provide health care related services or otherwise have a risk of exposure to blood or other material potentially containing bloodborne pathogens.

SCOPE OF EMPLOYEES COVERED

This policy and standard operating procedures cover employees who have occupational exposure to bloodborne pathogens. There are vaccinations for HBV. There are no vaccinations for HIV or HCV. The City of Bryan will not provide contracted, part-time, temporary employees or volunteers with the HBV vaccination series, but all other aspects of this policy and procedures still apply to contracted, part-time, temporary employees or volunteers.

Job classifications that include employees who have potential occupational exposure risks are laboratory personnel, custodial personnel, law enforcement personnel, plumbing personnel, solid waste personnel and fire and safety personnel. For purposes of this policy, anybody that has been trained and certified in Cardiopulmonary Resuscitation or

First Aid and is prepared to respond will also be covered under this policy with the exception of those already excluded.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

The objective of infection control PPE is to prevent blood or other potentially infectious material from coming in contact with the employee's skin, eyes, mouth or mucous membranes under normal conditions of use and duration.

- The City of Bryan will pay for the purchase, cleaning, repairing or disposal of all infection control PPE.
- Supervisors shall make sure that appropriate PPE is provided.
- PPE provided will be either non-permeable or fluid-resistant.
- All garments which are penetrated by potentially infectious material are to be removed immediately or as soon as feasible and placed in the appropriate container. All contaminated PPE must be removed prior to leaving the work area and placed in a designated receptacle for cleaning and/or disposal.
- Gloves are to be worn where it is reasonably anticipated that employees will have hand contact with blood, other potentially infectious materials, non-intact skin, and mucous membranes.
- Latex sensitive employees will be provided with suitable alternative PPE.
- Disposable gloves are not to be washed or decontaminated for re-use. Damaged disposable gloves are to be removed and replaced as soon as reasonably possible.
- Utility gloves (rubber gloves designed for reuse) may be decontaminated for re-use provided that the integrity of the glove is not compromised. Utility gloves are to be discarded if they exhibit signs of deterioration, are cracked, peeling, torn, punctured or their ability to function as a barrier is compromised.
- Face masks in combination with eye protection devices, such as goggles, glasses with solid side shield, or chin length face shields, are required to be worn whenever splashes, spray, splatter, or droplets of blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can reasonably be anticipated.
- Surgical caps or hoods and/or fluid resistant shoe covers or boots are to be worn in instances when gross contamination can reasonably be anticipated.

Hepatitis B (HBV) Vaccine

- All employees who have been identified as having occupational exposure to blood or other potentially infectious materials are offered the HBV vaccine, at no cost to the employee, under the supervision of a licensed physician or licensed healthcare professional.
- The vaccine is offered after blood borne pathogens training and within 10 working days of their initial assignment to work unless the employee has previously received the complete HBV vaccination series, antibody testing has revealed that the employee is immune, or that the vaccine is contraindicated for medical reasons.

- Employees receive the vaccine through the City of Bryan Occupational Health clinic who will advise employees of the side effects and risks. The Occupational Health Clinic will administer the vaccination, schedule the appointments, and provide consultation and follow-up.
- Employees who decline the HBV vaccine must sign a declination statement (See attachment "B") Employees who initially decline the vaccine but who later elect to receive it may then have the vaccine provided at no cost.
- HBV vaccination must be made available to all "First Responder" employees (i.e. an employee that is trained to administer emergency care and first aid until qualified help arrives or employees designated to provide emergency care in their job description).
- Participation is voluntary. If the employee chooses to accept the vaccine, he or she must complete an election and consent form (See attachment "B").

LABELING AND SIGNS

Biohazards must be identified by fluorescent orange or orange-red warning labels with the legend approved in OSHA 1910.1030(g)(1)(i)(B) or in red bags/containers. Affected departments must have procedures in place that determine when labels or bags are to be used. The procedures must include the types of materials that should be labeled as biohazard material and the types of containers that are used to contain the materials.

Any clothing that has been contaminated with blood must be placed in a biohazard container or red bag for proper cleaning and decontamination. Departments with internal procedures in place may label a designated room for this purpose instead.

TRAINING AND RECORDKEEPING

Training for all employees will be conducted by their immediate supervisor prior to initial assignment to tasks where occupational exposure may occur. Annual refresher training will be conducted by the person designated by the Division Manager. It must be provided at no cost to the employee and during working hours. Training for employees is conducted by a person knowledgeable in the subject matter and includes an explanation of the following:

- Texas Health & Safety Code: Title 2, Subtitle D, Chapter 81, Subchapter H Bloodborne Pathogen Exposure Control Plan
- Exposure control plan (i.e., points of the plan, lines of responsibility, how the plan will be implemented, where to access plan, etc.)
- OSHA 29 CFR 1910.1030, Bloodborne Pathogen Final Rule
- Epidemiology and symptomology of bloodborne diseases
- Modes of transmission of bloodborne pathogens
- Procedures which might cause exposure to blood or other potentially infectious materials at this facility
- Potential HIV-transmission behaviors that are in violation of Texas criminal law

- Control methods which are used at the facility to control exposure to blood or other potentially infectious materials
- PPE available at this facility (types, use, location, etc.);
- HBV vaccine program in this entity
- Procedures to follow in an emergency involving blood or other potentially infectious materials
- Procedures to follow if an exposure incident occurs, to include U.S. Public Health Service Post Exposure Prophylaxis Guidelines
- Post exposure evaluation and follow up
- Signs and labels used at the facility
- An opportunity to ask questions with the individual conducting the training

Training records will be kept separately from a confidential medical record. The training record will include content, instructors and attendance and be maintained in the Risk Management office.

A confidential medical record must be kept for each employee identified in this policy. These records will be confidentially maintained by the City and shall include the following:

- Name of employee
- Social Security Number
- A signed election & consent form or a signed declination form.
- Verification that the health care professional received a copy of OSHA 1910.1030
- HBV vaccination dates and any medical records on the ability to receive vaccination.
- A copy of the health care professional's written opinion if an occupational exposure occurred.
- Copy of results of all tests and procedures.
- A description of the employee's duties related to each occupational exposure.

UNIVERSAL PRECAUTIONS

Housekeeping

Managers shall ensure that the worksite is maintained in a clean and sanitary condition. The supervisor shall determine and implement an appropriate written schedule for cleaning and methods of decontamination based upon the location, the type of surface to be cleaned, type of contamination present, and tasks or procedures being performed in the area.

- All contaminated work surfaces shall be decontaminated immediately or as soon as feasible after any spill of blood or other potentially infectious materials and at the end of each work shift.

- Protective coverings (e.g., plastic wrap, aluminum foil, etc.) used to cover equipment and environmental surfaces will be removed and replaced when they become contaminated as soon as feasible or at the end of each work shift.
- All bins, pails, cans, and similar receptacles intended for reuse must be inspected and decontaminated on a regularly scheduled basis.
- Any broken glassware which may be contaminated shall not be picked up directly with the hands.
- Sharps shall be handled in accordance with the other sections of this same policy.

General Precautions/Care

- Employees should wash their hands regularly and must wash their hands after any potential exposure. Employees who have cuts on their hands and are preparing food must use food preparation gloves.
- Protective eyewear and nasal protection must be worn if contaminants have the potential to be spattered or inhaled.
- When possible, employees should avoid direct contact with saliva, tears, sweat, blood, urine, semen, feces or vomit.
- Employees should not place common handheld items such as pens, penlights or paperclips in their mouths.
- Employees should refrain from eating, drinking, smoking, applying cosmetics or handling contact lenses in areas where there is potential exposure to blood or other potentially infectious materials.
- Employees shall not recap needles or syringes. Contaminated sharps must be disposed of in puncture-proof containers.
- Self contained Breathing Apparatus (SCBA) and resuscitation equipment must be disinfected after each use and stored in a sanitary manner.
- All employees are responsible for maintaining a clean and sanitary work site at all times.

OCCUPATIONAL EXPOSURES

Exposure Control Practices

- Universal precautions must be applied if any contact with blood or blood products can be reasonably expected.
- If not life threatening, encourage cuts or needle sticks to bleed freely. Flush exposures to mucous membranes with water.
- If medical attention is necessary, contact the City's Emergency Care Provider. If an occupational exposure has been made then the employee should be seen by the City's Emergency Care Provider immediately. Refer to attachments "E" and "F" for a flowchart and summary of the exposure response process. Medical results are confidential. The Emergency Care Provider will notify the employee directly of all test results.

Protocol for Reporting Potential Exposures

When the employee incurs an occupational exposure, the employee must report to the City's emergency care provider. All employees who incur an occupational exposure are offered a confidential medical evaluation and follow up. This is the protocol:

- An "Affidavit of Possible Exposure to Reportable Disease" (attachment "C") must be completed for the receiving facility and given to the emergency room for processing at the local Health Department. This initiates a request for testing of the source and must be received at the local Health Department within 72 hours.
- The City's Emergency Care Provider will evaluate the "Affidavit of Possible Exposure to Reportable Disease" and the "Blood and Body Fluid Exposure Report" (attachment "D") and make a determination of whether or not an occupational exposure has occurred.
- A copy of attachment "C" must also be attached to the Supervisor's Injury/Exposure Report and forwarded to Risk Management. The Supervisor's Injury/Exposure Report must be completed and delivered to Risk Management within 24 hours of the incident. If possible, identify the source on the Supervisor's Injury/Exposure Report too.
- The source is identified and documented, unless the City of Bryan or the Brazos County Health Department establishes that identification is infeasible or prohibited by state or local law. Refer to attachment "A" for the Brazos County Health Department's policy on "Mandatory testing of persons suspected of exposing other persons to a reportable disease."
- After obtaining consent, unless law allows testing without consent, the blood of the source individual will be tested for HIV/HBV infectivity.
- The employee is informed about the applicable laws and regulations concerning disclosure of the identity and infectivity of the source individual. Then the results of testing the source individual are made available to the exposed employee.
- The employee with a potential exposure must, within 10 days of the exposure, obtain appropriate medical testing. The City's Emergency Care Provider or Occupational Health Clinic shall test the employee's HIV/HBV serological status and complete the "DWCC-73" form.
- Should the employee decide against submitting to the appropriate medical testing, a declination statement must be signed and submitted with the Supervisor's Injury/Exposure Report, however, failure to submit to the appropriate medical testing could result in denial of benefits by TDI since a specific occupational exposure cannot be identified otherwise.
- The employee is offered post exposure prophylaxis in accordance with the current recommendations of the U.S. Public Health Service.
- The City's Emergency Care Provider or Occupational Health Clinic will give the employee appropriate counseling concerning infection status, results and interpretations of tests, and precautions to take during the period after the exposure incident. The employee is informed about what potential illnesses can develop and options for seeking medical evaluation and subsequent treatment.

- Risk Management and the City's Emergency Care Provider are designated to assure that the policy outlined here is effectively carried out and records maintained related to this policy.

Interaction with Healthcare Professionals

A written opinion is obtained from the healthcare professional who evaluates employees of The City of Bryan after an exposure incident. In order for the healthcare professional to adequately evaluate the employee, the healthcare professional must be provided with:

- A copy of the City of Bryan's infection control plan;
- A description of the exposed employee's duties as they relate to the exposure incident;
- Documentation of the route(s) of exposure and circumstances under which the exposure occurred;
- Results of the source individual's blood tests (if available); and,
- Medical records relevant to the appropriate treatment of the employee.

Written opinions are obtained from the healthcare professional in the following instances:

1) When the employee is sent to obtain the HBV vaccine, or
2) Whenever the employee is sent to a healthcare professional following an exposure incident.

Healthcare professionals are instructed to provide a written opinion to the employee within 15 days of the completion of an evaluation and to limit their written opinions to:

- Whether the Hepatitis B vaccine is indicated
- Whether the employee has received the vaccine
- The evaluation following an exposure incident
- Whether the employee has been informed of the results of the evaluation
- Whether the employee has been told about any medical conditions resulting from exposure to blood or other potentially infectious materials which require further evaluation or treatment.
- All other findings or diagnosis shall remain confidential and shall not be included in the written report**.**

DISPOSAL OF CONTAMINATED MEDICAL WASTE

Chemical Disinfection

The following procedures for treatment and disposal of all wastes contaminated by blood or body fluids shall be followed for all medical waste generated at facilities within the operational responsibilities of the City of Bryan. Waste may be treated using one of the following chemical agents:

- Any chemical registered with the Environmental Protection Agency and the Texas Department of Agriculture for such purpose.
- A freshly prepared solution of household chlorine bleach diluted to one part bleach to ten parts water.
- A solution of 70% by volume 2-Propanol (isopropyl alcohol).

The containerized waste items shall be totally immersed in the solution for a period of time not less than three minutes. Following chemical disinfection the liquid shall be poured off and disposed of in a sanitary sewer. The containerized waste shall then be placed in a leak resistant bag and marked "DECONTAMINATED MEDICAL WASTE" and disposed of in a sanitary landfill.
PPE shall be required during the entire decontamination process and then be disposed of as contaminated waste.

Contaminated Equipment

Equipment which may become contaminated with blood or other potentially infectious materials is examined prior to servicing or shipping and decontaminated as necessary unless the decontamination of the equipment is not feasible. Biohazard labels will be placed on all portions of equipment which may still be contaminated.

Needles

Contaminated needles and other contaminated sharps will not be bent, recapped, removed, sheared, or purposely broken. The department's plan should allow an exception to this if no alternative is feasible and the action is required by a specific medical procedure. If such action is required, then the recapping or removal of the needle must be done by the use of a device or a one-handed technique.

Contaminated Sharps Discarding and Containment

- Contaminated sharps will be discarded immediately or as soon as feasible in containers that are closable, puncture resistant, leak-proof on sides and bottom, and biohazard labeled or color-coded.
- Containers for contaminated sharps will be easily accessible to personnel; located as close as is feasible to the immediate area where sharps are being used or can be reasonably anticipated to be found. They are maintained upright throughout use, not allowed to overfill, and replaced routinely.
- Regulated waste other than sharps is placed in appropriate containers that are closable, leak resistant, labeled with a biohazard label or color-coded, and closed prior to removal. If outside contamination of the regulated waste container occurs, it is placed in a second container that is also closable, leak proof, labeled with a biohazard label or color-coded, and closed prior to removal.
- All regulated waste will be properly disposed of in accordance with federal, state, county, and local requirements.

Texas Administrative Code Title 25, Part 1, Chapter 1, Subchapter K §1.131-§1.137 allows for the treatment and disposal of special waste from health care related facilities.

RECORDKEEPING REQUIREMENTS

According to Texas Administrative Code Title 30, Part 1, Chapter 330, Subchapter Y §330.1219, any department which generates 50 pounds or less per calendar month of special wastes and which treats all or part of the wastes on site shall maintain, for at least three years, a written record which, at a minimum, contains the following information:

- date of treatment
- amount of waste treated
- method/conditions of treatment
- name and initials of the person performing treatment

RESPONSIBILITIES

Risk Management

Risk Management, using attachment "G", shall be responsible for annually reviewing the exposure control plan, updating when necessary, and documenting when accomplished. Risk Management shall also be responsible for maintaining exposure records in the employee's confidential medical file and notifying affected employees of test results or procedures to identify a positive exposure.

Department Managers/Supervisors

Department Managers/Supervisors shall be responsible for assuring appropriate protective equipment is available and that employees are aware of the plan and the protection that it provides to them.
Department Managers/Supervisors shall also be responsible for contacting Risk Management if the employee is believed to have been exposed to a potentially contaminated material, for making sure that a Supervisor's Injury/Exposure Report is completed for each exposure and that the exposed employee receives a copy of the follow-up guidelines and are referred for follow-up as soon as possible.

Employees

Employees shall be responsible for complying with the procedures outlined in this policy, including but not limited to, notifying their supervisor of any occupational exposure.
If treatment is rendered by an emergency service employee and an occupational exposure has occurred the employee should notify the attending medical personnel of the receiving facility and file a completed Texas Department of Health "Report of Possible Exposure to Transporter" with that facility.

Attachment "A"

BRAZOS COUNTY HEALTH DEPARTMENT

MANDATORY TESTING OF PERSONS SUSPECTED OF EXPOSING OTHER PERSONS TO A REPORTABLE DISEASE

Purpose: To provide a mechanism under the Communicable Disease Prevention and Control Act, Health and Safety Code, §81.050 by which an emergency medical service employee, paramedic, fire fighter, correctional officer, or law enforcement officer, who receives a bona fide exposure to a substance of concern for transmission of a reportable disease in the course of employment or volunteer service may request the Brazos County Health Authority to order testing of the person who may have exposed the worker.

Criteria: A request may be made only if the emergency responder:

- has experienced the exposure in the course of his/her employment or volunteer service;
- believes the exposure places him/her at risk of a reportable disease;
- presents to the Brazos County Health Authority a sworn affidavit that delineates the reasons for the request.

Procedure:

1) Upon receiving a request for mandatory testing as indicated above, the Brazos County Health Authority shall review the request and notify the requester whether the request meets the criteria establishing risk of infection with a notifiable condition.

2) If the Brazos County Health Authority determines that the criteria establishing risk of infection with a reportable disease have been met, he shall

   a) Determine which diagnostic tests may be indicated to verify exposure to certain reportable diseases;
   b) Give the source who is subject to be tested prompt and confidential written notice of the order to be tested, which must include the following items:
      - The grounds and provision of the order, and the factual basis for its issuance;
      - A referral to appropriate health care facilities where the source can be tested for certain notifiable conditions;
      - A notice of the right of the source to refuse to be tested;
      - A statement of the authority of the Health Authority to ask for a court order requiring the testing.

3) The cost of testing of the source will be borne by the employer of the exposed person or by the volunteer organization for whom the exposed person is volunteering.

4) If the source refuses to be tested, then the Brazos County Health Authority shall request that the District Attorney's office petition the District Court for a hearing on the order.

5) If testing of the source is done, the Brazos County Health Authority is responsible for the following:

a) Developing protocols for coding test specimens to ensure that any identifying information concerning the source will be destroyed as soon as the testing is complete;
b) Informing the requestor of the test results;
c) Informing both the requestor and the source of the need for medical followup and counseling services in the event that the source is found to have a reportable disease;
d) Advising appropriate postexposure medical followup as recommended by the U.S. Public Health Service. (See attached excerpt from "Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis", MMWR, June 29, 2001/Vol.50/No. RR-11;
e) If postexposure prophylaxis (PEP) is indicated, referral for immediate medical assessment.

6) A copy of all pertinent documents will be retained by Brazos County Health Department.

7) Forms will be available on the BCHD website at www.brazoshealth.org/forms.htm.

Attachment "B"

Hepatitis B Vaccination
Election and Consent

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B Virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. I agree and elect to participate in the Hepatitis B immunization program.

Employee Name_____ Division_____

Signature_____ Date_____

Hepatitis B Vaccination
Declination Statement

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring Hepatitis B Virus (HBV) infection. I have been given the opportunity to be vaccinated with Hepatitis B vaccine, at no charge to myself. However, I decline Hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring Hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with Hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Name of Employee_____Date_____

Signature_____

Attachment "C"

Affidavit of Possible Exposure to Reportable Disease

I (Name)_____a (Job Classification)_____ with the City of Bryan, while performing my duties in response to an emergency situation on (date)_____may have been exposed to a reportable disease as defined by Texas Department of Health rules. The following information describes the incident to the best of my knowledge.

Source's Name_____
Address_____
Preliminary Diagnosis_____
Probable Present Location_____

Employee's Name_____
Home Address_____
Home Phone #_____
Work Phone #_____
Emergency Phone #_____
Work Address: City of Bryan
Division/Department_____
Street Address_____
EMS Run# or Police Case #_____
Date and Time of Exposure_____
Circumstance of the Exposure:
_____
_____
_____
Source's Symptoms (if known):
_____
_____
_____
Transport designation of source_____

I hereby declare that the facts stated in this notice are true.

Signature_____

Subscribed and sworn to before me this_____day of _____, _____

_____
Notary Public Brazos County, Texas

Attachment "D"

Blood and Body Fluid Exposure Report

Name: _____ Date of Exposure: _____

Place where exposure occurred: _____ Dept: _____

1. *Was the source identifiable? (check one)*
   - *a.* Yes Name: _____
   - *b.* No
   - *c.* Unknown
   - *d.* Not applicable

2. *Which body fluids were involved in the exposure? (check all that apply)*
   - *a.* Blood or blood products
   - *b.* Vomit
   - *c.* Sputum
   - *d.* Saliva
   - *e.* CSF
   - *f.* Peritoneal fluid
   - *g.* Pleural fluid
   - *h.* Amniotic fluid
   - *i.* Urine
   - *j.* Other, describe _____

3. *Was the exposed part (check all that apply)*
   - *a.* Intact skin
   - *b.* Non-intact skin
   - *c.* Eyes
   - *d.* Nose
   - *e.* Mouth
   - *f.* Other, describe _____

4. *Did the blood or body fluid (check all that apply)*
   - *a.* Touch unprotected skin
   - *b.* Touch skin between gap in protective garments
   - *c.* Soak through protective garment or barrier
   - *d.* Soak through clothing

5. *Which items were worn at the time of exposure? (check all that apply)*
   - *a.* Single pair of latex/vinyl gloves
   - *b.* Double pair of latex/vinyl gloves
   - *c.* Goggles
   - *d.* Eyeglasses
   - *e.* Eyeglasses with shields
   - *f.* Face shield
   - *g.* Surgical mask
   - *h.* Surgical gown
   - *i.* Plastic apron
   - *j.* Lab coat, type _____
   - *k.* Other, describe _____ _____

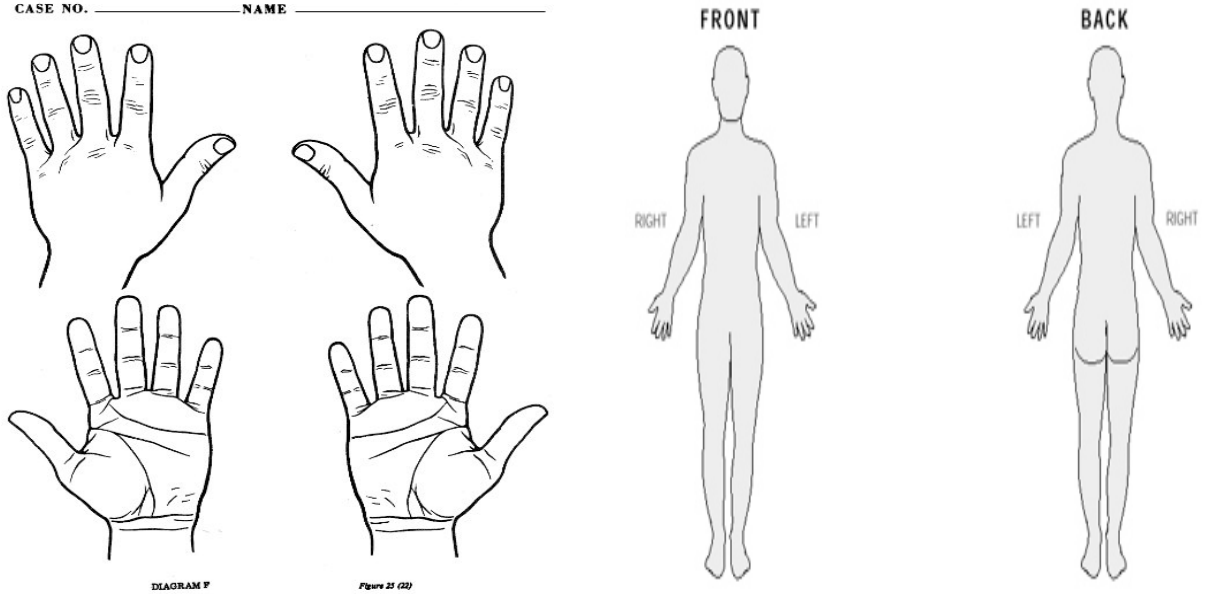
6. *Was the exposure the result of (check one)*
    a. Direct patient contact
    b. Specimen container leaked/spilled
    c. Specimen container broke
    d. IV tubing/bag/pump leaked/broke
    e. Feeding/ventilator/other tube separated/leaked/splashed
    f. Other body fluid container spilled/leaked
    g. Touched contaminated equipment/surface
    h. Touched contaminated drapes/sheets/gowns
    i. Unknown
    j. Other, describe _____

7. *For how long was the blood/body fluid in contact with your skin/mucous membranes? (check on)*
    a. Less than 5 minutes
    b. 5-14 minutes
    c. 15 minutes to 1 hour
    d. More than 1 hour

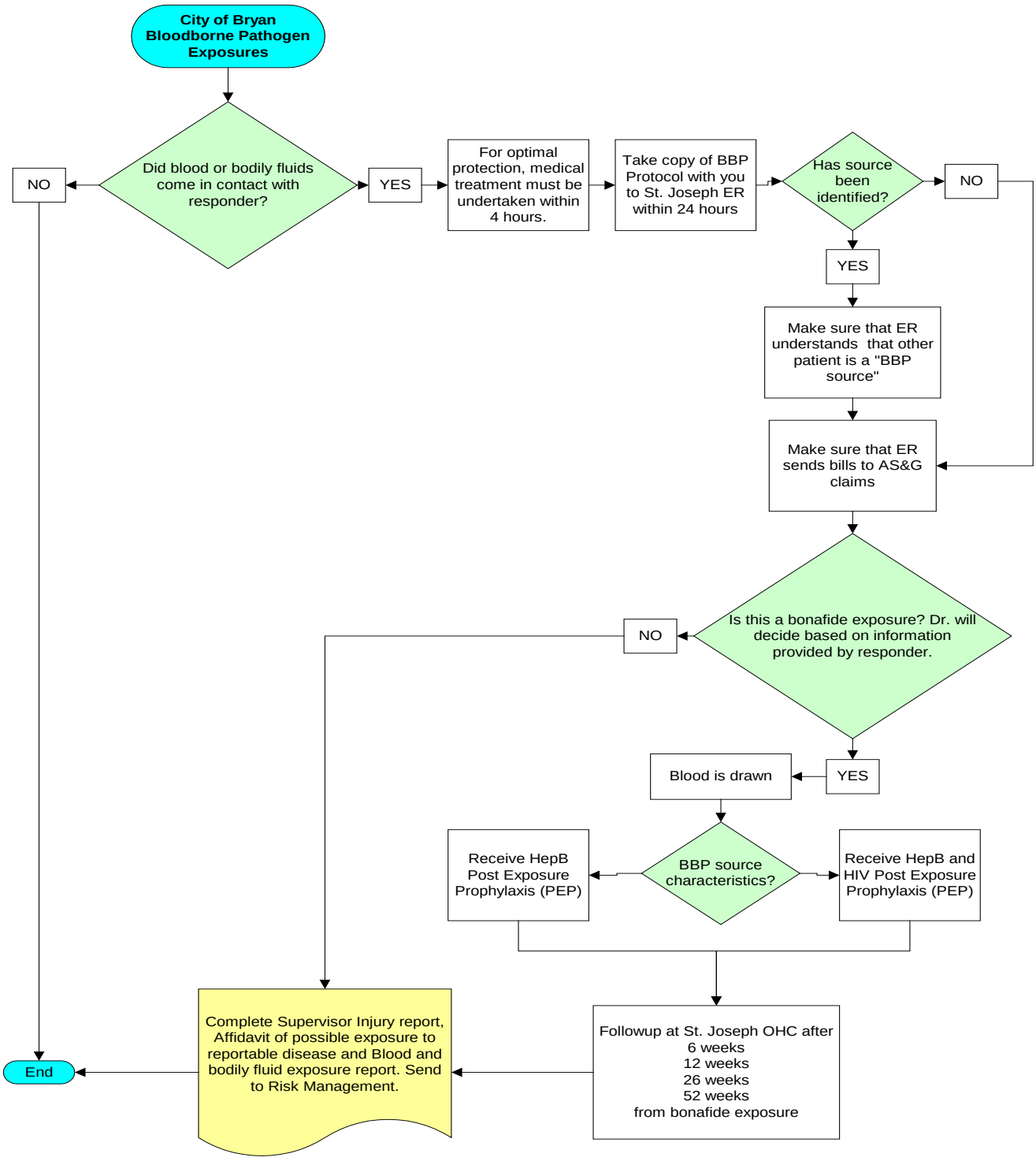
8. *Estimate the quantity of blood/body fluid that came in contact with your skin/mucous membrane (check one)*
    a. Small amount (up to 5 cc or up to one teaspoon)
    b. Moderate amount (up to 50 cc or up to a quarter a cup)
    c. Large amount (more than 50 cc)

9. *Describe the circumstances leading to this exposure:*
    _____
    _____
    _____
    _____

10. *Mark the size and location of the exposure*



Attachment "E"



Attachment "F"

CITY OF BRYAN
BLOOD BORNE PATHOGEN PROTOCOL

If you sustain a Blood Borne Pathogen Exposure, the following steps must be followed. Take this form with you to the Emergency Room for reference.

Emergency Room Information

1. Blood must be drawn as soon possible for an exposure.
    a. Per City of Bryan Policy, you have 24 hours to report to the Emergency Room
    b. Due to the nature of the incident, it is recommended that you report to the Emergency Room within 2 hours. For optimal protection, post exposure medication must be given within the first 4 hours of exposure.
    c. If you know the name of the source, bring that information to the Emergency Room and Lab when your blood is drawn.

2. Billing must go to the following:

    Medical Treatment
    AS&G Claims
    5300 Hollister, Ste 400
    Houston, Texas 77040

Employee Information

1. Report the incident to your Supervisor within 24 hours of exposure.
    a. Fill out the **Supervisor Injury Report, Affidavit of Possible Exposure to Reportable Disease, and Blood and Body Fluid Exposure Report**
    b. Fax all reports to Risk Management (209-5059) within 24 hours.

2. Should the doctor determine that a "bona fide" BBP exposure has occurred, a post exposure prophylaxis (PEP) will be administered, then:

3. Follow up with St. Joseph Occupational Health Clinic:
    a. 6 weeks post exposure
    b. 3 months post exposure
    c. 6 months post exposure
    d. 1 year post exposure

Your results will be mailed via **certified mail** from Occupational Health after each follow up

4. If no "bona fide" BBP exposure has occurred then the paperwork is simply kept on file.

If you have questions about your exposure or results contact the Occupational Health Clinic at 821-7373

Attachment "G"

The following assessment tool should be utilized in order to gain an understanding as to the control plan as set forth.

ASSESSMENT TOOL

Yes /No

1. The exposure control plan is located in each work center
2. Employees at occupational risk for blood borne pathogens exposure are identified
3. Employees comply with universal precautions when performing duties
4. Employees appropriately use engineering controls in the work center
5. Employees employ safe work practices in performance of duties
6. Hand washing facilities are readily accessible in the work centers
7. Employees regularly wash their hands, especially after glove removal
8. Employees deposit contaminated sharps in biohazard containers immediately after use
9. Employees change filled biohazard containers when full
10. Employees do not eat, drink, apply cosmetics or lip balm, smoke, or handle contact lenses in the work area
11. Food and beverages are not kept in close proximity to blood or bodily fluids
12. Employees do not mouth pipette/suction blood or bodily fluids
13. Employees place specimens in leak resistant containers after collection
14. Employees place specimens in biohazard leak proof containers for shipment
15. Employees properly decontaminate equipment before servicing or shipping for repairs or place a biohazard label to inform others the equipment remains contaminated
16. Employees wear the designated fluid resistant personal protective equipment/attire appropriate for the task at hand
17. Employees place the contaminated personal protective equipment in the appropriate receptacles
18. Employees maintain a clean environment at all times
19. Employees use an EPA approved germicide properly to decontaminate and clean the facility and equipment
20. Employees know the safe procedure for contaminated, broken glass clean up
21. Employees demonstrate knowledge of the agency's policies regarding disposal and transport of regulated waste by placing regular waste, special waste, and/or biohazard waste in appropriate containers and transporting the waste according to policy
22. Employees place wet laundry in leak resistant bags or containers and transport used laundry in biohazard leak proof containers
23. Each employee knows his documented hepatitis B vaccine status
24. Employees know where and to whom to report exposure incidents
25. An employee occupational exposure protocol is practiced in accordance with U.S. Public Health Service
26. Employees are oriented and receive annual training to the exposure control plan
27. Recording and reporting occupational exposures are conducted in accordance with OSHA's Blood borne Pathogens Standard
28. Medical and training records are maintained in accordance with OSHA's Blood borne Pathogens Standard

Effective Date: 07/01/99
Revision Date: 08/12/10

OCCUPATIONAL INJURIES/ILLNESSES

The City provides for the treatment and care of on-the-job injuries and illnesses in accordance with the Texas Worker's Compensation Act. On-the-job injuries and illnesses must be reported immediately by the employee to their supervisor. Shift work employees shall notify the "on-call" supervisor. Employees shall be provided appropriate medical attention as soon as possible.

Although the Texas Worker's Compensation Act allows an employee 30 days to notify his or her employer of an occupational injury or illness, City employees must report the injury by the end of their shift to be eligible for the City of Bryan's supplemental worker's compensation pay. Supplemental worker's compensation pay is for the first 40 hours of work time lost due to an occupational injury.

INJURY REPORTING

All on-the-job injuries and illnesses will be investigated. Facilities, equipment and materials causing an on-the-job injury shall be taken out of service until an investigation is completed and corrective measures taken. The supervisor will complete all reporting and investigating requirements according to City procedures. The supervisor shall notify Risk Management the same day the employee reports the injury/illness. Risk Management will obtain the information necessary to report the injury to the Texas Department of Insurance (TDI) formerly known as the Texas Workers Compensation Commission. The Supervisor's Injury/Exposure Report must be delivered to Risk Management within two (2) business days from the date the injury occurred.

A Supervisor's Injury/Exposure Report should be completed and sent to Risk Management for any of the following reasons:

1. An employee has been injured on the job.
2. An employee claims he or she has been injured on the job, whether the supervisor agrees or not. If there is reason to doubt the injured employee or evidence indicates all or part of his or her statement is false, the employee should be informed of this. The supervisor and/or division manager should attach a statement to the report indicating reasons for believing the employee's claim is not valid.
3. A situation arises where an employee may present a claim the supervisor is unsure would be covered.
4. When requested by Risk Management. Occasionally, an employee reports his or her injury to the TDI before reporting it to the City. The TDI then requests a report from Risk Management.

MEDICAL TREATMENT

Emergencies/Trauma

Serious injuries requiring immediate medical treatment such as profuse bleeding, broken bones, not-breathing, unconsciousness, shock, etc. shall warrant emergency treatment. Follow these steps:

1. Dial 911. Explain the nature of your emergency and ask for an ambulance.
2. Qualified employees shall administer first aid as necessary until the ambulance arrives.
3. If transported by an employee, proceed to the nearest emergency room. See below for non-life threatening injuries.
4. The injured employee's supervisor shall, as soon as possible, notify the hospital emergency room personnel of the nature of the injuries of the patient being transported to them.
5. The supervisor shall notify Risk Management after the emergency is under control or at the beginning of the next workday. If there is a fatality or critical injury and it is after office hours, the supervisor should notify Risk Management through Police dispatch.

Non-life threatening emergencies

The City has designated medical providers that are to be utilized for initial treatment of non-life threatening occupational injuries/illnesses. Employees are authorized to receive treatment from any other approved worker's compensation doctor they have been referred to by the treating worker's compensation physician.
The medical providers are:

St. Joseph Express Care/Occupational Health Clinic
2010 E. Villa Maria Rd.
Bryan
Hours: 8:00 am - 5:00 pm, Monday – Friday

Scott and White Occupational Medicine
1600 University Dr. East
College Station
Hours: 8:00 am - 5:00 pm, Monday – Friday

After hours, the employee should seek treatment at:

St Joseph Hospital Emergency Room
2700 E. 29th St.
Bryan

Unless the severity of an injury or the time or location necessitates otherwise, no other medical provider should be utilized for worker's compensation injuries. If an employee seeks medical attention for a non-emergency injury from any physician, clinic or hospital other than those authorized, the visit will not be covered through Worker's Compensation. If the employee feels that he or she is not recovering properly, they may

petition TDI to authorize treatment from a different Worker's Compensation physician. Contact Risk Management for the proper forms.

For initial non-life threatening medical treatment, the supervisor or designee should transport the injured employee to one of the above facilities. Always clarify that the visit is work-related to avoid receiving medical bills for the work-related injury. The employee should also receive a Workers' Compensation Medical Report (DWCC-73) before leaving the facility. It advises the employee on the type and level of restriction(s) recommended by the physician. The physician should complete the report at the time of treatment and return it to the employee or supervisor. The employee is not authorized to return to full duty until the physician completes the form and it has "no restrictions."

A separate form is needed for each treatment or visit. It is the employee's responsibility to keep follow-up appointments. Time missed because of a missed appointment will be counted as sick leave and the employee may not return to work until the doctor has reassessed them and documented it on the DWCC-73.

If any prescriptions need to be filled always verify that the pharmacy will accept Worker's Compensation prescriptions first. The employee should never have to pay out of pocket or produce an insurance card.

The physician will evaluate the medical condition and restrictions of the worker at each visit to determine medical progress. Any changes in the restrictions shall be sent to Risk Management. Risk Management will contact the employee's supervisor to keep him or her informed of the employee's medical status and upcoming doctor's appointments.

First Aid Treatment

Superficial injuries such as minor cuts, bruises, small punctures, scratches, etc. may be treated with first aid.

1. The first aid treatment rendered should be described on the Supervisor's Injury/Exposure Report.
2. A medical provider should examine injuries appearing to be superficial but extremely painful or showing any unusual symptoms.
3. If there is even the slightest doubt as to the well being of an injured employee, the employee should be sent for medical treatment.
4. If the employee requires medical attention later, the employee should inform their supervisor. Risk Management should be informed and medical attention obtained at one of the approved medical providers.

RETURN TO WORK AFTER MEDICAL ATTENTION

The injured employee must return to Risk Management with the completed Medical Report following treatment. If the employee's return to work would be unnecessarily delayed by contacting Risk Management (such as after normal office hours) the supervisor may accept the Medical Report. An employee must have a release from the physician indicating he or she may return to duty without any restrictions before

returning to work. The supervisor shall deliver the Medical Report to Risk Management the next regular workday.

Risk Management will contact the supervisor/division manager to discuss available temporary work assignments for an employee who is released with physical restrictions. An offer will be made to the employee for the temporary work assignment. If the employee is unwilling to accept the assignment, if eligible and applicable, the employee must use sick leave or Family Medical Leave Act (FMLA) until fully released from physical restrictions. Human Resources must be notified if FMLA is activated. Failure to report for duty as assigned will be dealt with in accordance with personnel policies. Temporary work assignments may be in a position, division and/or shift other than the original position. Employees will do only those tasks approved by the physician. Risk Management will coordinate any changes in work restrictions with the supervisor or division manager. If the physician's restrictions are less than one week without further treatment, the employee will automatically revert to full duty on the date designated by the physician.

If the health care provider removes the injured employee from all work duties, Risk Management will contact the supervisor/division manager and keep them informed of the employee's status. In order for Risk Management to keep the injured employee's supervisor/division manager updated, all employees who are losing time from work should contact the Risk Management Claims Specialist on a weekly basis. This will also give Risk Management the opportunity to address any questions or concerns the injured employee might have while he or she is off work.

Supervisors or managers should contact Risk Management regarding concerns about the employee's recovery or return to work.

Effective Date: 10/20/03
Revised Date: 09/10/10

CHEMICAL AND OCCUPATIONAL EXPOSURE

Official duties of some City of Bryan (City) employees occasionally require them to perform tasks in hostile environments. It is the City's intent to provide as safe a working environment as possible at all times. Since the City is not able to control every aspect of every environment it is important that additional measures be taken to ensure that employees have not received, or continue to receive, detrimental exposures to chemicals and/or other hazardous substances in the workplace. This policy is limited only by the potential for chemical and occupational exposures in the workplace.

Laboratory personnel and hazardous materials responders are the primary focus of this policy. However, other personnel such as those that have the possibility of asbestos exposure, when executing certain tasks, may be covered under this policy as deemed appropriate.

This policy is not meant to supercede other City policies which may overlap in their scope. For example, the respiratory protection policy requires pulmonary function testing on an annual basis. Those results may be utilized to fulfill needs identified in this policy too.

REFERENCES

The Occupational Safety and Health Administration (OSHA) is the primary regulatory agency with guidelines on developing proactive plans for protecting the employee. The primary regulation that will be referred to in this policy is found at 1910.1450 *Occupational Exposure to Hazardous Chemicals in Laboratories*.
Other regulations that might be referred to are:
1910.120 *Hazardous Waste Operations and Response* (OSHA)
1910.1001 *Toxic and Hazardous Substances: Asbestos* (OSHA)
1910.1200 *Hazard Communications* (OSHA)
1910.130 *Bloodborne Pathogens* (OSHA)
1910.134 *Respiratory Protection* (OSHA)
40 CFR 311 *Worker Protection*. (Environmental Protection Agency)
NFPA 1500 *Standard on Fire Department Occupational Safety and Health Program.* (National Fire Protection Administration)
25 TAC §§ 295.1-295.9 & 295.11-295.13 *Texas Hazard Communication* Act (Texas Administrative Code)
6055.5-M *Occupational Medical Surveillance Manual* (Department of Defense) may also be referred to by our medical providers for guidance.

DEFINITIONS

Screening- A method for detecting disease or body dysfunction before an individual would normally seek medical care. Screening tests are usually administered to individuals without current symptoms, but who may be at high risk for certain adverse health outcomes. The fundamental purpose of screening is early diagnosis and treatment of the individual and thus has a *clinical* focus.

Surveillance- The analysis of health information to look for problems that may be occurring in the workplace that requires targeted prevention, and thus serves as a feedback loop to the employer. Surveillance may be based on a single case or sentinel event, but more typically uses screening results from the group of employees being evaluated to look for abnormal trends in health status. Surveillance can also be conducted on a single employee over time. Review of group results helps to identify potential problem areas and the effectiveness of existing worksite preventive strategies. The fundamental purpose of surveillance is to detect and eliminate the underlying causes (i.e., hazards/exposures) of any discovered trends and thus has a *prevention* focus.

Medical Review Officer (MRO) - The City has established the St. Joseph Occupational Health Clinic (OHC) as the Primary Care Provider. The OHC is responsible for providing a Medical Review Officer. The MRO will make final medically based decisions on behalf of the City. The MRO will provide medical surveillance and screening for the City as directed. OHC will be the official repository for all medical records related to this policy.

Exposure- occurs when a toxic substance or infectious agent is taken into your body or is in direct contact with your body.

Contamination- occurs when the material clings to or saturates clothing or your equipment.

CONFIDENTIALITY

All medical results are confidential information and will not be shared with any person except the employee being tested. The MRO shall notify the Director of Human Resources if an employee is receiving unacceptable exposures. All disclosures of health information shall be in compliance with the Healthcare Information Patient Privacy Act (HIPPA). Information received from the MRO shall be used only for the purpose of mitigating the exposure problem.

For asbestos exposure cases, the City of Bryan will request a written, signed opinion from the examining physician. This opinion shall contain the results of the examination as follows:

1. The physician's opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to asbestos, tremolite, anthophyllite or actinolite. Information supplied to the physician shall include:
    a. A description of the affected employee's duties as they relate to their exposure.
    b. The employee's representative exposure level or anticipated exposure level.

    c. A description of protective and respiratory equipment the employee may be expected to use.
    d. Previous medical examination information of the employee, upon employee consent, if requested by the examining physician.
2. Any recommended limitations on the employee or upon the use of personal protective equipment such as clothing or respirators.
3. A statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions resulting from asbestos, tremolite, anthophyllite or actinolite exposure that require further explanation or treatment.
4. The employer shall instruct the physician not to reveal in the written opinion given to the employer specific findings or diagnoses unrelated to occupational exposure to asbestos, tremolite, anthophyllite or actinolite.
5. The employer shall provide a copy of the physician's written opinion to the affected employee within thirty (30) days from its receipt.

Medical Record Storage
Records of employees examined for exposure to asbestos shall be maintained at the St. Joseph's Occupational Health Clinic, Texas indefinitely. An exact duplicate of all records stored at St. Joseph's Occupational Health Clinic shall be maintained in a confidential file in the City of Bryan personnel records indefinitely.

These documents shall be available for examination and copying to the employee or anyone having the specific consent of the employee or the Assistant Secretary of Labor in accordance with OSHA standard 29 CFR 1910.20.

TRAINING

Training for all employees and supervisors shall be conducted in conjunction with annual Hazardous Communication Act presentations. Additionally, those divisions that employ personnel that have been exposed to, or with the possibility of exposure to asbestos, will provide training in the recognition and identification of Asbestos Containing Material (ACM) and the proper usage of Personal Protective Equipment (PPE) when a potential exposure exists. This will be accomplished annually and the training records forwarded to Risk Management.

AUDITS

Audits shall be conducted on an annual basis in the same manner as Hazardous Communication audits. Additional audits may be conducted for cause.

MEDICAL TESTING FEES

All testing conducted at the behest of the City will be paid for by the City. The employee is not expected to pay for any examination required as a condition of employment.

RESPONSIBILITIES

Risk Management

Risk Management is responsible for periodic review and updates of this policy and serves as a resource to answer questions or problems concerning this policy. They shall also be responsible for auditing this policy as necessary to verify compliance with its intended purpose.

Department Managers/Supervisors

Department Managers are responsible for budgeting for the appropriate medical testing and reasonable responses, assuring appropriate knowledge is imparted to employees through training opportunities and contacting Risk Management if the employee is believed to have been exposed to a harmful chemical or material. If training is not provided directly by Risk Management, then it is the Department Manager's responsibility to designate a person to accomplish that task. Department managers and supervisors are also responsible for achieving participation by at-risk employees or securing a signature on a declination statement for the services offered. (See **ATTACHMENT "A"**)

Employees

Employees are responsible for notifying their supervisor in writing if they feel that they have been contaminated or received an exposure during the delivery of a City service. (See **ATTACHMENT "B"**) Employees are also responsible for being aware of the dangers of chemicals and harmful materials present in the workplace and for complying with the procedures outlined in this policy.

PROGRAMS

Chemical Exposure Identification

The program begins by determining which employees may have chemical exposures in the normal course of their duties. This initial assessment may be made at any place in the chain of command but should start at the supervisor level. Laboratory personnel and Hazardous materials (HAZMAT) responders are the primary focus. Police may also have specific exposures which warrant inclusion in this program. Other applications of this policy may be found for pesticide/herbicide applicators, mechanics, street maintenance personnel, swimming pool operations, and electric utility personnel.

Once the personnel have been identified, The MRO is presented with a list of chemicals that the employee works with. This list will serve as a guide for designing the medical screening and surveillance procedures for that individual or group. Due to the nature of the work, HAZMAT responders will be examined for symptoms that would occur based upon their *expected* exposures. Additional examinations may be conducted for personnel with specific exposures.

Asbestos Dust Exposure Identification

The City of Bryan provides a medical examination program for employees who may be exposed to an asbestos dust hazard. This program is provided at no cost to the employee and satisfies all requirements of EPA Worker Protection Rule 40 CFR 763 and, by reference, OSHA Asbestos Standard, Title 20 CFR 1910.1001. The medical exam is provided within thirty (30) days following employment in an occupation exposed to airborne concentrations of asbestos fibers. In addition, the City provides an annual examination for as long as the person remains an employee of the City and within thirty (30) days before or after termination of employment with the City. A person may be identified as having an exposure by doing one or more of the following tasks.

Electrical

1. Emergency Repairs – Emergency situations may arise which necessitate the removal of asbestos containing materials. These repairs are usually completed in a very short time (1-72 hours). Using the proper engineering controls should keep the exposure limits below the Permissible Exposure Limits (PELs) established by the Occupational Safety and Health Administration (OSHA). However, short-term, high fiber count exposure may occur, despite best efforts. Proper procedures and personal protective equipment will be utilized in those instances that have the possibility of exposure.
2. Glove Bag Removal – On occasion, our maintenance personnel will employ the glove bag procedure to remove asbestos insulation from plant piping. The glove bag technique is an engineering control, which, theoretically, eliminates asbestos fiber exposure. However, since a glove bag, like any other manmade device, can fail, we must assume that a possibility of limited exposure exists.
3. Electrical Work – Some electrical components are insulated with asbestos containing material. Electrical personnel may possibly be exposed to asbestos fibers when they service some plant electrical components.

Water

1. Emergency Repairs - EPA guidelines allows for the repair and modification of water systems containing asbestos containing cement pipe or transite pipe.
    a. The tools normally used to work with water system piping will work efficiently with transit pipe if prudent precautions are used to insure that potentially friable material is contained with a binding medium.
    b. When working with asbestos containing materials, all activities that might produce dust must be wetted down with water or some other substance that will contain the dust and keep it from becoming airborne.
    c. As a further precaution, rubber gloves will be worn in addition to the normal leather or cloth gloves. Respirators with a HEPA filter will be provided and used when all operations are performed. All workers in the area will wear these while operations are performed.

Establish Medical Baseline
After the medical procedures have been determined, the employee will complete a medical history questionnaire. This questionnaire is used to assist the MRO in setting up a surveillance plan. The employee then makes an appointment at OHC and is given an examination. This initial examination will result in a medical baseline from which future medical conditions can be assessed.

For personnel that have may have been exposed to asbestos dust, the following medical examination procedures apply:

1. A written history to elicit symptomatology of respiratory disease, which shall be completed using the OSHA Respiratory Disease Standardized Questionnaire, 29 CFR 1910.1001 Appendix D, Part 1. (Initial Medical Questionnaire Part 2, Periodic Medical Questionnaire will be administered during the annual examinations).
2. A pulmonary function test consisting of forced vital capacity (FVC) and forced expiratory volume at one (1) second (FCC1.0).
3. A complete physical examination with emphasis on the respiratory system, the cardiovascular system, and digestive tract.
4. A chest roentgenogram (posterior-anterior 14 x 7 inches) shall be administered during the initial medical exam. It will not be administered annually due to hazards associated with excessive x-ray exposure.

		Age of Employee	
Years since first exposure	15 to 35	35 to 45	45+
0 to 10	Every 5 years	Every 5 years	Every 5 years
10+	Every 5 years	Every 2 years	Every 1 year

TABLE 1 – FREQUENCY OF CHEST ROENTGENOGRAMS This table shall govern frequency of chest roentgenograms: Chest Roentgenograms shall be interpreted and classified in accordance with a professionally accepted classification system and recorded on Roentgenographic Interpretation Form (CSR/NIOSH (m) 2.8).

Physicals
If no immediate medical concerns (related to chemical exposure) are identified, then the employee will be expected to return for a follow-up examination every three years. The MRO will determine the appropriate medical procedures for the tri-annual examinations. If an intermediate exposure occurs, the employee may be required to submit to additional medical testing. The MRO will be the determining authority for those situations.

For personnel under the asbestos examination program, refer to the information provided in Table 1.

All medical examinations and procedures related to exposure to asbestos are performed by, or under the supervision of, a licensed physician. Persons, other than licensed physicians, who administer the pulmonary function testing required by this program, shall have completed a training course in spirometry sponsored by an appropriate academic or professional institution.

Roentgenograms shall be interpreted and classified only by a B-reader, a board eligible/certified radiologist, or an experienced physician with known expertise in pneumoconiosis.

Exposure Scenarios
If the medical baseline determines that the employee has already received an exposure, the MRO will notify the City. The MRO will assist the City in determining the appropriate protective action. If the MRO determines that the continued presence in their position will not worsen the employee's condition, then medical evaluations will recur at an elevated rate as deemed necessary by the MRO. Other actions may be, but are not restricted to:

1. Removing the employee from the position
2. Correcting the exposure problem

If the employee is removed from the position, all appropriate labor laws must be followed. Human Resources must be contacted for further guidance on an individual basis.

The preferred choice should be to correct the exposure problem. The first choice of correcting the exposure problem should be to use engineering principles to prevent exposure to the hazard. The next best choice would be to alter work procedures to prevent exposures. This may include written procedural plans or even the use of completely different chemicals and/or hazardous materials in the workplace. Finally, the last method would be to provide additional personal protective equipment for the situation which is causing the exposure.

A flow chart is attached to this policy to simplify the process. (See **ATTACHMENT "C"**)

Please note that this policy contains an MS Word compatible flowchart (ATTACHMENT "C"). The flow chart for the final document will have the same data but uses a different MS software feature (hopefully) making the concepts easier to follow..

Attachment "A"

Chemical and Occupational Exposure Plan
Declination Statement

I understand that during the normal discharge of my duties or in response to emergency situations that I may be exposed to chemicals and/or hazardous materials that could harm my health. I also understand that I have been given the opportunity to participate in the Chemical and Occupational Exposure plan being administered by the City of Bryan at no charge.

However, I decline to participate in the program at this time. I understand that by declining this opportunity, I continue to be at risk of serious health problems related to a(n) exposure(s). If, in the future, I continue to have occupational exposure(s) to this or other chemicals then I may elect to participate in this program.
Refusal to participate in this program will not be used as grounds for termination or discipline. However, refusal to participate in this program after being identified as having received a chemical exposure may reduce the employer's liability.

Name of Employee_____Date_____

Signature_____

Attachment "B"

Affidavit of Possible Chemical and/or Hazardous Material Exposure in the Workplace

I (Name)_____a (Job Classification)_____ with the City of Bryan, while performing my normal duties or in response to an emergency situation on (date)_____may have been exposed to a chemical and/or hazardous material in the workplace. The following information describes the incident to the best of my knowledge.

Home address_____
Home phone #_____
Work phone #_____
Work address: City of Bryan
Division/Department_____
Street address_____
Suspected chemical's name_____
Address of potential exposure_____
Body part affected_____
Type of symptoms □ None □ Acute □ Chronic
Type of exposure □ Inhalation □ Absorption □ Injection □ Ingestion

EMS Run# or Police case #_____
Date and time of exposure_____
Circumstances of the exposure:
_____
_____
_____

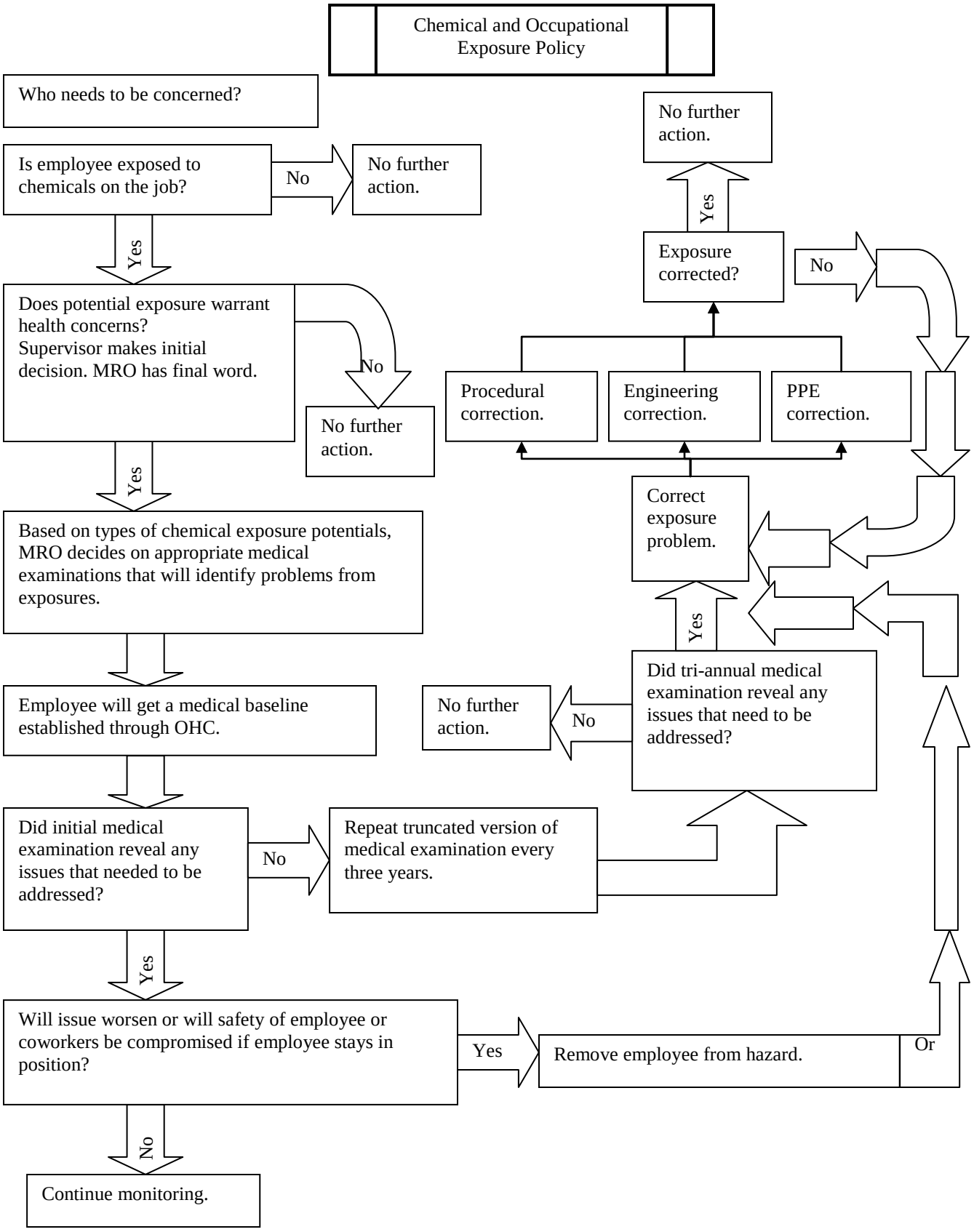
I hereby declare that the facts stated in this notice are true.

Employee Signature_____

Supervisor Name and Signature_____

Received in Risk Management by_____

at_____AM/PM on _____20____.


Chemical and Occupational Exposure Policy
Who needs to be concerned?
Is employee exposed to chemicals on the job?
No
No further action.
Yes
Does potential exposure warrant health concerns? Supervisor makes initial decision. MRO has final word.
No
No further action.
Yes
Based on types of chemical exposure potentials, MRO decides on appropriate medical examinations that will identify problems from exposures.
Employee will get a medical baseline established through OHC.
Did initial medical examination reveal any issues that needed to be addressed?
No
Repeat truncated version of medical examination every three years.
Yes
Will issue worsen or will safety of employee or coworkers be compromised if employee stays in position?
Yes
Remove employee from hazard.
Or
No
Continue monitoring.
No further action.
Yes
Exposure corrected?
No
Procedural correction.
Engineering correction.
PPE correction.
Correct exposure problem.
Yes
Did tri-annual medical examination reveal any issues that need to be addressed?
No
No further action.

Effective Date: 07/01/99
Revision Date: 06/11/10

LOCKOUT/TAGOUT

The purpose of the Lockout/Tagout program is to prevent accidents. These accidents happen when an employee, who does not realize the equipment is being repaired, starts the equipment and stored energy is released causing injury or death. This policy establishes the minimum requirements for the lockout/tagout of hazardous energy.

Lockout is the preferred means of deenergizing equipment and should always be used by employees when circumstances allow. If an energy-isolating device cannot be locked out then the device shall be tagged out. The City will provide lockout and tagout equipment.

This procedure applies to all of the following situations:

1. Whenever the employee is required to remove or bypass a guard or other safety device.
2. If the employee is required to place any part of their body into an area where it could be damaged by moving parts.
3. Whenever work is being performed on a cord or plug connected to electric equipment.

DEFINITIONS

Affected Employee – An employee whose job is altered while service or maintenance is being performed or an employee whose job requires him or her to work in an area in which servicing or maintenance is being performed.

Authorized Employee – An employee who locks out or tags out equipment or machinery in order to perform service or maintenance on the equipment or machinery. An affected employee becomes an authorized employee when the employee's job requires him or her to perform service or maintenance on the equipment or machinery.

Capable of Being Locked Out – An energy isolating device is capable of being locked out if it has a hasp or other means of attachment through which a lock can be attached.

Energized – Connected to an energy source or containing residual or stored energy.

Energy Isolating Device – A device that physically prevents the transmission of energy, including but not limited to, a manually operated electrical circuit breaker, a disconnect switch or a block. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.

Lockout – The placement of a lockout device on an energy isolating device to ensure that the equipment or machinery being controlled cannot be operated until the lockout device is removed.

Lockout Device – A device that utilizes a lock in order to hold an energy isolating device in a safe position and prevent the energizing of a machine or equipment.

Normal Production Operations – The use of equipment or machinery to perform its intended production function.

Servicing and/or Maintenance – Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying and repairing machines or equipment. These activities include but are not limited to lubrication, cleaning or cleaning machines or equipment making adjustments or tool changes.

Tagout – The placement of a tagout device on an energy isolating device to indicate that the energy isolating device and the equipment or machinery may not be operated until the tagout device is removed.

Tagout Device – A visible warning device which can be securely fastened to an energy isolating device to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

TRAINING AND COMMUNICATION

The City of Bryan will provide training to ensure that employees understand the purpose and procedure of lockout/tagout. This training will include the proper use, application and removal of lockout/tagout devices. Employees will be trained to recognize energy sources and the methods necessary to isolate or control the hazardous energy. Employees shall be instructed about the prohibitions relating to the restart or reenergizing of machines or equipment. When tagout systems are used, the employees will be trained to recognize the limitations of the tags.

Employees will be retrained when they are reassigned jobs, when a change in machinery is made and/or when periodic inspection reveal inadequacies in employee's knowledge of this lockout/tagout policy. Records will be kept of employee training.

LOCKOUT AND TAGOUT DEVICES

Below are standards for lockout/tagout devices. These standards should be followed in order to ensure the effectiveness of lockout/tagout procedures.

1. Devices will have a uniform color, shape, size and format within all divisions.
2. Devices will be sturdy enough to prevent removal without the use of excessive force.
3. The employee that put the lockout device in place, the date and the time that the lockout began should always be indicated.
4. Devices will be able to withstand the environment they are exposed to for at least as long as servicing and maintenance requires.
5. Devices will be constructed so exposure to weather conditions or wet locations will not cause tag to deteriorate or become illegible.
6. Devices, when used in corrosive environments such as areas where acid and alkali chemicals are stored, will withstand deterioration.
7. Design will be strong enough to prevent accidental removal.

8. Devices should have a minimum unlocking strength of at least 50 pounds (in general at least equivalent to all environment tolerant nylon cable ties).
9. Warning signs will be posted to identify the hazardous conditions that could result if machine or equipment is energized.
10. Devices should never be removed, bypassed, ignored or otherwise defeated without authorization of the person responsible for the tag.

LOCKOUT/TAGOUT APPLICATION

Lockout devices shall be fastened so that the energy isolating devices are held in a "safe" or "off" position. Tagout devices should be affixed so that it is clearly indicated that the movement of energy isolating devices from the "safe" or "off" position is prohibited. The authorized employees who will be performing the servicing or maintenance of the equipment should always perform Lockout/Tagout procedures. All employees affected by the lockout/tagout procedure must be notified before the controls are applied and before the controls are removed.

LOCKOUT/TAGOUT PROCEDUES

The following procedures shall be followed:

1. Preparation for shutdown. Before any machines or equipment are turned off or shutdown, the authorized employee must know:
   a. The types and amounts of energy that power the machinery or equipment.
   b. The hazards of the energy.
   c. How the energy can be controlled.
2. Machine or equipment shutdown.
   a. The equipment must be shutdown following the established procedures for that equipment or machinery. Always consult the owner's manual on shutdown procedures.
   b. The shutdown must be done so that no one is endangered as a result of the equipment or machinery stopping.
3. Machine or equipment isolation.
   a. Be sure to isolate all energy sources. Secondary power as well as the main power source must be isolated. For example, never remove a fuse without using the disconnecting mechanism.
4. Application of lockout/tagout devices.
   a. An authorized employee will affix Lockout/tagout devices to all energy isolating devices.
   b. Lockout devices shall be fastened so that the energy isolating devices are held in a "safe" or "off" position.
   c. Group lockout or tagout: Primary responsibility is vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device. When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lockout or tagout control responsibility will be assigned to an authorized employee designated to coordinate affected workforces and insure continuity of protection. Each authorized employee from each crew, craft, department, etc. shall affix a personal lockout or tagout device.

d. When lockout is used, every employee in the crew must attach his or her own personal lock.
e. Tagout devices shall be affixed so that it is clearly indicated that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited.
f. Tagout devices shall be attached at the same place that the lockout device would have been attached or as close to the spot as possible.

5. Control of stored energy.
   After all lockout/tagout devices have been affixed, all stored or residual energy must be released, disconnected or otherwise rendered safe. This can be done by the following:
   a. Inspect the equipment or machinery to ensure that all parts have stopped moving.
   b. Install ground wires.
   c. Relieve any trapped pressure.
   d. Release any tension in springs or spring driven parts.
   e. Secure any parts that could fall due to gravity.
   f. Secure any hydraulic or pneumatic parts that could move due to a loss of pressure.
   g. Bleed lines and leave vent valves open.
   h. Drain piping systems and close valves to prevent the flow of materials.
   i. If a line must be blocked and there is no valve, use a blank flange.
   j. Purge reactor tanks and process lines.
   k. Dissipate extreme cold or heat or wear protective clothing.
   l. If energy can reaccumulate, monitor to ensure safe levels.
6. Isolation verification.
   Before working on any equipment or machinery, the authorized employee must verify that the equipment or machinery has been isolated and deenergized. This can be done by:
   a. Verifying that the main source cannot be moved into the "on" position.
   b. Pressing all start buttons and activating controls to ensure the machinery or equipment does not start. Be sure to shut off all controls when testing is completed.
   c. Use a voltmeter or other equipment to test the switch.

REMOVING LOCKOUT/TAGOUT

Before any lockout/tagout devices are removed and energy is restored to the equipment or machinery, the following procedures will be followed:

1. The work are will be inspected to ensure:
   a. No tools or other items have been left in the work area.
   b. The machinery or equipment is properly reassembled.
   c. The machinery or equipment is safe to operate.
2. The work area will be checked to ensure that all employees are clear of the equipment or machinery.
3. Affected employees will be informed that the lockout/tagout devices are being removed.

4. The employee who affixed the device will only remove the lockout/tagout. If the authorized employee is not there to remove the device, reasonable attempts must be made to contact the employee to inform him or her of the lockout/tagout being removed. In the event the employee cannot be contacted; the employee's supervisor can remove the lock or tag.

If the lockout/tagout device must be temporarily removed to test the equipment or machinery, the following procedure will be followed:

1. Follow all procedures given above under Removing Lockout/Tagout.
2. Energize the equipment or machinery and proceed with testing.
3. When testing is completed, reapply lockout/tagout device as specified above under Lockout/Tagout Application.

CONTRACT WORK

Whenever a contractor is performing service or maintenance for the City of Bryan, the contractor must be informed of the City's lockout/tagout policy. City employees in the affected work area must be informed to be alert for different types of lockout/tagout devices.

Effective Date: 07/01/99
Revision Date: 01/15/10

MACHINERY AND MACHINE GUARDING

Machine guarding in conjunction with appropriate personal protective equipment shall be used to protect the operator and other employees in the machine area from potential hazards. The causes of the hazards presented by machines include, but are not limited to, nip points, rotating parts, reciprocating parts, flying chips and sparks. All of these hazards can potentially cause injury or a fatality. Barrier guards, two-hand tripping devices and electronic safety devices are several types of guards that are available.

DEFINITION: A machine guard is a protective appliance, device or attachment that is designed to protect an individual from loss or injury due to the actions of moveable parts associated with the operation of powered equipment.

PROCEDURES

The following are procedures for guarding:

1. Any machine in operation that exposes an employee to possible injury shall be guarded.
2. Guards shall not be placed on the machine where they may pose as an accident hazard.
3. Guards shall be permanently attached to the machine by attachments designed for maintenance.
4. Guards must be durable and constructed to resist wear and abuse in a machine environment.
5. Guards must not interfere with the machine or equipment operation.
6. Guards must prevent access to the danger zone during operation.
7. Guards should be designed to remain on while inspections, adjusting, lubricating, cleaning and repairing operations are performed, if possible.
8. Guards are designed to prevent the entry of a person's body parts and or clothing into a hazardous part of a machine.
9. Guards are designed to prevent material from striking a person.
10. Guard openings will only allow for insertion of material for processing and access for inspection.
11. Supervisors shall establish a program of regular inspections of their power equipment to ensure safe operating conditions, and shall maintain a record of inspections and maintenance work.
12. All point-of-operations injuries must be reported in accordance with the Departmental procedures.
13. Prior to the operation of any piece of equipment with machine guarding, the individual shall be trained by qualified personnel with regards to the proper use and placement of the machine guards and lockout/tagout procedures.

Effective Date: 07/01/99
Revision Date: 08/11/09

MATERIAL HANDLING AND STORAGE

The efficient handling and storing of materials are vital to industry. In addition to raw materials, these operations provide a continuous flow of parts and assemblies through the workplace and ensure that materials are available when needed. Employees should know and understand the potential hazards associated with the task at hand and how to control their workplaces to minimize the danger. Employers and employees should examine their workplaces to detect any unsafe or unhealthful conditions, practices, or equipment and take corrective actions.

Most Common Hazards:

*Workers frequently cite the weight and bulkiness of objects that they lift as major contributing factors to their injuries.
*Falling objects, improperly stacked or stored materials, improper use of various types of equipment.

Precautions for moving materials manually:

When moving materials manually, workers should attach handles or holders to loads. In addition, workers should always wear appropriate personal protective equipment and use proper lifting techniques.

Procedures:

You should make your employees aware of potential injuries that can occur when manually moving materials, including the following:

1. Do not attempt to lift beyond your capability
2. Place your feet as close to the object as possible to ensure good footing before attempting any lifting activity.
3. Obtain a firm grip on the object.
4. Keep knees bent and back vertical at all times during lift.
5. Always lift with your legs not your back.
6. If the object is heavy, obtain assistance or use power equipment to lift the object.
7. When two or more employees are carrying an object each employee should face the direction in which they are traveling. A signal for release shall be used before attempting to lower or drop an object.
8. Employees should avoid twisting or excessive bending when lifting or setting down objects.
9. When a task requires repetitive lifting, the objects should be arranged to limit bending and twisting.

Using the following personal protective equipment prevents needless injuries when manually moving materials:

1. Hand and forearm protection, such as gloves, for loads with sharp or rough edges.
2. Eye protection.
3. Steel-toed safety shoes or boots.

Precautions for moving materials mechanically:

Using mechanical equipment to move and store materials increases the potential for employee injuries. Workers must be aware of both manual handling safety concerns and safe equipment operating techniques. Any employees that are required to operate a forklift must have proper certification to operate a forklift. Employees should avoid overloading equipment when moving materials mechanically by letting the weight, size, and shape of the material being moved dictate the type of equipment used. All materials handling equipment has rated capacities that determine the maximum weight the equipment can safely handle and the conditions under which it can handle that weight. Employers must ensure that the equipment-rated capacity is displayed on each piece of equipment and is not exceeded except for load testing.

Procedures:

When picking up items with powered equipment, workers must do the following:

1. Center the load on the forks as close to the mast as possible to minimize the potential for tipping or the load falling.
2. Avoid overloading because it impairs control and causes tipping over.
3. Do not place extra weight on the rear of a counterbalanced forklift to allow an overload.
4. Adjust the load to the lowest position when traveling.
5. Follow the manufacturer's operational requirements.
6. Pile and cross-tier all stacked loads correctly when possible.

Precautions for storing materials:

Stored materials must not create a hazard for employees. Employers should make workers aware of such factors as the materials' height and weight, how accessible the stored materials are to the user, and the condition of the containers where the materials are being stored when stacking and piling materials. To prevent creating hazards when storing materials, employers must do the following:

1. Place stored materials inside buildings at least 6 feet from hoist ways, or inside floor openings;
2. Separate non-compatible material.
3. Proper Housekeeping, aisles and passageways shall be kept clear and free of obstructions. Storage areas shall be kept free of materials they may present a hazard from tripping, fire, explosion or pests.
4. Place bound material on racks, and secure it by stacking, blocking, or interlocking to prevent it from sliding, falling, or collapsing.

Precautions for Stacking Materials:

Stacking materials can be dangerous if workers do not follow safety guidelines. Falling materials and collapsing loads can crush or pin workers, causing injuries or death. To help prevent injuries when stacking materials, workers must do the following:

1. Ensure that stacks are stable and self-supporting, with the heavier materials placed on the bottom of stack.
2. Do not store pipes and bars in racks that face main aisles to avoid creating a hazard to passersby when removing supplies.
3. Stack bags and bundles in interlocking rows to keep them secure.
4. Stack bagged material by stepping back the layers and cross-keying the bags at least every ten layers (to remove bags from the stack, start from the top row first.
5. Band boxed materials or secure them with cross-ties or shrink plastic fiber.
6. Stack drums, barrels, and kegs symmetrically.

7. Block the bottom tiers of drums, barrels, and kegs to keep them from rolling if stored on their sides.
8. Paint walls or posts with stripes to indicate maximum stacking heights for quick reference.
9. Observe height limitations when stacking materials.

Employee Training:

The City Bryan recommends that Department Managers establish a formal training program to inform workers how to recognize and avoid materials handling hazards. Instructors should be well versed in safety engineering and materials handling and storing. The training should reduce workplace hazards by emphasizing the following factors:

1. Dangers of lifting without proper training.
2. Avoidance of unnecessary physical stress and strain.
3. Awareness of what a worker can comfortably handle without undue strain.
4. Use of equipment properly.
5. Recognition of potential hazards and how to prevent or correct them.
6. Use of a Material Safety Data Sheet (MSDS) on potential hazards of materials and how to properly store them.
7. Proper storing, stacking and moving of material manually and mechanically.
8. Forklift certification and training offered through the Risk Department.

Effective Date: 07/01/99
Revision Date: 12/10/09

PORTABLE TOOLS AND OTHER HAND HELD EQUIPMENT

Portable tools present a special type of hazard due to the large number of human choices that are allowed during operation. Unlike fixed equipment, these tools allow humans to choose the function of the tool and the way the function is carried out. This freedom can lead to misuse of the tool and result in an accident. This policy's purpose is to reduce the hazards involved with the use of portable tools. It is essential that manufacturer safety guidelines be followed when a tool is used. Eye, foot, hand, ear and other appropriate protective devices shall be worn when using any portable tools.
Below are lists of general safety guidelines based on tool types.

HAND TOOLS

1. Employees shall use the proper tool for the job.
2. Tools shall not be left where they may cause a person to trip of fall.
3. Defective tools shall be tagged to prevent their use and removed from the job site.
4. Impact tools such as chisels, punches, etc. shall be immediately repaired or replaced when they become cracked or mushroomed.
5. Shims shall not be used to make a wrench fit.
6. Wrenches with sprung or damaged jaws shall be replaced.
7. Wooden handles that are loose, cracked or splintered shall be replaced.
8. Metallic tools (i.e. metal measuring tapes) or tools with metal continuing through the handle shall not be used on or near electrical circuits or equipment.
9. Tools will be raised or lowered in tool buckets or securely fastened to hand lines.
10. Tools shall never be placed unsecured on elevated areas.
11. When working on open gratings, a canvas or other suitable drop cloth should be used to prevent tools from falling through the grating.
12. All cutting tools such as saws, axes, wood chisels, etc. shall be transported and stored in guards.

NON SPARKING TOOLS

When conventional steel tools are used in potentially combustible or explosive atmospheres, dangerous sparks may be accidentally created by tools slipping or being struck against hard surfaces.
More details on hazardous atmospheres can be found in the OSHA standard 1910.146 or the European standards ATEX 95 and ATEX 137.

1. For situations where non-magnetic properties are important Aluminum-Bronze alloy tools or Copper-Nickel alloy tools should be used.
2. If non-magnetic properties are not critical Copper-Beryllium alloy tools are harder and more durable.

3. Titanium tools are harder, non-sparking and non-magnetic but tend to be quite expensive.
4. For metallurgical reasons it is impossible to manufacture spark resistant tools to the same hardness as high alloy steel, and for this reason they must be handled and maintained with special care. Frequent redressing to remove embedded particles of steel or other substances which could cause sparks is essential.

POWERED TOOLS

In addition to the guidelines for hand tools working with powered tools requires additional precautions.

Electric Tools

1. All electric tools will be examined before use to ensure they are in good conditions, all safety devices are intact, electric cords are not frayed and electrical components are in proper working condition.
2. Electric tools will be used only for their intended use as specified by the manufacturer.
3. Electric tools will not be used where there is a hazard of flammable vapor, gas or dust.
4. Electric tools will be disconnected from their power source when repairs are being made or bits, blades etc., are being changed.
5. Hand-held tools manufactured with non-metallic cases are called double-insulated. If approved, they do not require grounding under the National Electrical Code. Although this design method reduces the risk of grounding deficiencies, a shock hazard can still exist.
6. An “assured grounding system” or ground fault interrupter (GFI) shall protect electric tools connected to a central power supply.
7. Electric tools will not be used in the proximity of standing water or outside when it is raining.

Pneumatic Tools

1. Pneumatic tools shall never be pointed at another person.
2. Pneumatic tools shall be secured to the hose or whip so that the tool is prevented from accidentally disconnecting.
3. Safety clips or retainers shall be securely installed and maintained on pneumatic impact (percussion) tools to prevent attachments from being accidentally expelled.
4. The safe operating pressures, established by the manufacturer, shall not be exceeded.
5. Compressed air shall not be used for personal cleaning purposes or any form of horseplay.
6. The use of hoses for hoisting or lowering tools is not permitted.
7. All hoses exceeding ½ inch inside diameter shall include a safety device to reduce pressure in case of hose failure or disengagement of a connection.
8. Before making adjustments or changing air tools the air shall be shut off at the air supply valve and the hose shall be bled.

9. Only trained employees shall operate pneumatic tools.
10. If the pneumatic tools may be exposed to live electrical parts, it shall have a nonconductive hose and an accumulator to collect moisture.

Hydraulic Tools

1. The safe operating pressures, established by the manufacturer, shall not be exceeded.
2. Unless quick-acting, self-closing connectors are used, pressure shall be released before connections are broken.
3. Employees shall not use any part of their body to attempt to locate or stop hydraulic leaks.
4. The fluid used in hydraulic powered tools shall be fire resistant and shall retain its operating characteristics at the most extreme temperatures to which it will be exposed when used in applications that might expose those tools to temperature or electric shock.

Powder Actuated Tools

1. Powder actuated equipment should never be pointed at another person.
2. Ensure that other employees are clear of the work area before setting off charges.
3. Only trained, qualified employees should operate powder actuated equipment.
4. Proximity safety lockouts shall not be removed from the equipment for any reason.
5. Care will be taken to match the correct charge with the type of materials to be fastened.
6. Keep hands and feet away from the point of discharge when working with powder actuated equipment.
7. Never use cartridges that are designed for purposes other than powder actuated equipment.
8. Fasteners must not be fired into material which would let them pass through to the other side nor be driven into very hard or brittle materials which might chip or splatter, or make the fastener ricochet.
9. The fastener must not be driven into materials like brick or concrete any closer than three inches to an edge or corner. In steel, the fastener must not come any closer than a half–inch from a corner or edge.

Liquid–Fuel Tools

1. A fifth type of powered tool is fuel–powered, usually by gasoline. The most serious hazard with fuel–powered tools comes from fuel vapors that can burn or explode and give off dangerous exhaust fumes.

2. The worker must be careful handling, transporting, and storing the gas or fuel in approved flammable liquid containers, according to proper procedures for flammable liquids.

3. Before the tank for a fuel–powered tool is refilled the user must shut the engine down and allow it to cool to prevent accidental igniting of hazardous vapors.

4. If a fuel–powered tool is used inside a closed area, effective ventilation and/or personal protective equipment is necessary to avoid breathing carbon monoxide. Fire extinguishers must be available in the area.

TRAINING

Supervisors will cover the following topics during basic employee training:

1. Appropriate uses of tools
2. Operating limitations of tools
3. Inspections
4. Adjustments and maintenance
5. Changing heads, bits, blades, etc.
6. Safety features
7. Operation techniques
8. Care and cleaning
9. Other safety measures (i.e. personal protection, etc.)

Effective Date: 07/01/99
Revision Date: 10/20/03
Revision Date: 10/08/10

SAFETY INCENTIVE PROGRAMS

The purpose of safety incentive programs is to reduce the incidence of collision and injury to City of Bryan employees. The objective of safety incentive programs is to instill safety attitudes and awareness in all City of Bryan employees by achieving goals to earn a tangible benefit.

To accomplish the purpose and objective of the safety incentive programs, the City of Bryan will designate a 'Safety Incentive Program' fund each fiscal year. The monies in this fund will be divided among departments in accordance with the procedures outlined in this policy.

DEFINITIONS

First Aid Injury- Damage to a person's body part or parts that can be prudently self-treated or treated without the assistance of a physician or other medical professional.

Lost Time Injury- A lost time injury occurs whenever a physician directs an employee not to work beyond the normal shift on which the person was injured. Follow up visits during normal work hours do not constitute lost time.

Medical Treatment - Any damage to a person or body part that requires a prescribed course of treatment or more than one visit to a physician or medical professional.

Reportable Collision- Contact between a vehicle and another vehicle or object that produces damage.

Reportable Injury- Any injury that requires more treatment than is required for a First Aid Injury.

Injury - Damage or harm to the physical structure of the body and a disease or infection naturally resulting from the damage or harm. This term includes an occupational disease.

Occupational Disease - A disease arising out of and in the course of employment that causes damage or harm to the physical structure of the body, including a repetitive trauma injury. This term includes a disease or infection that naturally results from the work-related disease. This term does not include an ordinary disease of life to which the general public is exposed outside of employment, unless that disease is an incident to a compensable injury or occupational disease.

RESPONSIBILITIES

Division Managers

It is the responsibility of Division Managers to support and encourage safety and to use progressive disciplinary action where appropriate to achieve compliance with safety policies.

Division Managers must also continually survey and monitor work areas ensuring that safe practices and procedures are employed.

As operations in each division vary, some divisions may find that a safety awareness program can reduce the incidence of injuries or collisions. Where reasonable, Division Managers are encouraged to create a safety incentive program tailored to meet the needs of their division. Division Managers should review injury and collision reports to determine which operational function(s) need the most safety improvement.

Division Managers may submit to Risk Management a written safety incentive program for each fiscal year. The division's safety incentive program should be clearly explained in a written proposal format. The proposal should explain the following minimum criteria:

- Objective
- Total funding estimate
- A description of the program
- Criteria which will be used to provide individual or group incentives
- Employee communication plan
- Measurable standards of success

Risk Management

The Risk Management Division is responsible for collecting and distributing to Division Managers quarterly and annual reports of: first aid injuries, lost time injuries, medical treatment only injuries, reportable collisions, and reportable injuries.

Risk Management is responsible for distributing the monies from the 'Safety Incentive Programs' fund to Division Managers by December 31st each year. Risk Management will review proposed safety incentive programs each fiscal year and will determine what percentage of the 'Safety Incentive Programs' fund that each division will receive. In addition, Risk Management shall provide advice and/or examples of plans and programs that may work well in individual departments.

Risk Management is responsible for monitoring the effectiveness of each division's safety incentive program and encouraging Division Managers in the promotion of the program to employees. Risk Management reserves the right to terminate access to funds should the distribution of those funds prove to be detrimental to the purpose of this policy.

Building Proctors - October 2013

For an effective threat response safety policy to work, every staffed facility in the City of Bryan needs to have a building proctor. It is important that there be an alternate for each site too since the proctor will be called upon to make decisions when time is of the essence.

The City Manager is responsible for making decisions that will affect all City facilities.

A building proctor is responsible for their facility. If you are selected as the building proctor for your facility, these are some of the things you will be responsible for:

- Make a head count whenever an evacuation takes place. Account for individuals working off-site. The building proctor is the primary contact for Fire or Police personnel.
- Be prepared to respond at odd hours for fire response, injuries, break-ins etc. at your facility. Have access to keys and alarm codes.
- Be responsible for maintaining facility safety equipment. A staff member may be charged with regular checks of equipment (first aid kits) or tasks may be contracted out (fire extinguishers) but the proctor is responsible for making sure the actions are taken and documented.
- Preparing (with assistance) threat response plans specific to your facility. A standardized format is preferred and accessible through RiskMangement.

1.	Municipal Office Building	Sally Jurica	209-5101
	Alternate	Elisabeth Thompson	209-5100
2.	MSC Main Building	Eric Zaragoza	209-5931
	Alternate	Linda Lindan	209-5923
3.	MSC Warehouse	Scott Brooks	209-5508
	Alternate	On-Call	218-6506
4.	MSC Fleet	Bobby Walker	209-5905
	Alternate	Bridget Johnson	209-5903
5.	MSC Sign and Signal Shop	Eddie Lovato	218-2302
	Alternate	David Hernandez	218-2302
6.	MSC Facilities/Parks Office	Eloise Huerta	209-5527
	Alternate	Kathy Yeager	209-5520
7.	MSC Facilities/Parks Shop	Eloise Huerta	209-5527
	Alternate	Kathy Yeager	209-5520
8.	Recycling Center	Tanya Lamar	209-5675
	Alternate	Eric Zaragoza	209-5931

9.	Bryan Aquatic Center	Marty Mulgrew	209-5515
	Alternate	Head Guard	209-5222
10.	Henderson Harbor	Marty Mulgrew	209-5515
	Alternate	Head Guard	209-5221
11.	Sue Haswell Pool	Marty Mulgrew	209-5515
	Alternate	Head Guard	209-5235
12.	BRAC Offices	Raymond Bradley	209-5203
	Alternate	Marcus Walker	209-5227
13.	Neal Recreation Center	Jimmie Gilbert	209-5212
	Alternate	Eloise Huerta	209-5527
14.	Travis B. Bryan Golf Course	Billy Bob Lane	822-0126
	Alternate	Dennis Wilganowski	822-9233
15.	Sextant Office (Cemetery)	Bob Holmes	209-5230
	Alternate	Eloise Huerta	209-5527
16.	Information Technology	Gus Roman	209-5476
	Alternate	On-call Operator	209-5488
17.	Water Production Office	Jeff Bodish	209-5670
	Alternate	Operator	209-5671
18.	Well Field – Maintenance Shop	Jeff Bodish	209-5670
	Alternate	Operator	209-5671
19.	Wastewater Treatment Plant # 1	Victor Harris	209-5663
	Alternate	Operator	209-5650
20.	Wastewater Treatment Plant # 2	Victor Harris	209-5663
	Alternate	Operator	209-5655
21.	Wastewater Treatment Plant # 3/Lab	Victor Harris	209-5663
	Alternate	Operator	209-5660
22.	Justice Center - Police	Louise Langdon	209-5387
	Alternate	Alex Ramirez	209-5348
23.	Justice Center - Municipal Court	Hilda Cuthbertson	209-5424
	Alternate	Marilyn Newton	209-5429
24.	Clara B. Mounce Library	Larry Koeninger	209-5611
	Alternate	Laura Mills	209-5614

25.	Larry J. Ringer Library	Kathleen Dill	764-3625
	Alternate	Edward Young	764-3416
26.	Carnegie Genealogy Library	Nan Ross	209-5634
	Alternate	Louvonne Johnson	209-5634
27.	Federal Building (Leased)	Billy Ebner	209-5522
	Alternate	Kathy Yeager	209-5520
28.	Horizon Building (Community Development)	Alsie Bond	209-5181
	Alternate	Eric Barton	209-5185
29.	Community Emergency Operations Ctr.	Jerry Henry	393-9916
	Alternate	Amy Zaragoza	821-1000
30.	BTU Administrative Offices	Gary Miller	821-5621
	Alternate	Angie Saxby	821-5751
31.	BTU Meter Shop	Calvin Hendrickson	821-5810
	Alternate	Reg Markowski	821-5926
32.	BTU Warehouse/Offices	Mike McMillan	821-5904
	Alternate	_____	_____
33.	Atkins Power Plant	Operator	821-5941
	Alternate	David McIntyre	821-5740
34.	Atkins Distribution Offices	James Bodine	821-5923
	Alternate	Mark Telg	821-5924
35.	Atkins Toolroom/Training	Ray Berger	821-5725
	Alternate	Frank Boley	821-5958
36.	Atkins QSE	Ken Lindberg	821-5620
	Alternate	Michael Matthews	821-5622
37.	Dansby Power Plant	David McIntyre	821-5740
	Alternate	Diane Walker	821-5743
38.	Fire Station # 1	Randy McGregor	209-5971
	Alternate	Nikki Koski	209-5970
39.	Fire Station # 2	Operator	209-5580
	Alternate	Nikki Koski	209-5970
40.	Fire Station # 3	Operator	209-5584
	Alternate	Nikki Koski	209-5970

41.	Fire Station # 4	Operator	209-5588
	Alternate	Nikki Koski	209-5970
42.	Fire Station # 5	Operator	209-5590
	Alternate	Nikki Koski	209-5970

ATTACHMENT B

THREAT RESPONSE WORKSHEET

Please use the following guidelines to assist you or other occupants of your building in recording information obtained from a telephone bomb threat.

Questions to ask person reporting the threat.

1. When is bomb going to explode?
2. Where is it right now?
3. What does it look like?
4. What kind of bomb is it?
5. What will cause it to explode?
6. Did you place the bomb?
7. Why?
8. What is your address?
9. What is your name?

Exact wording of threat. (Record on paper as soon as possible.)

Phone number of caller.

Caller's voice.

____ Calm	____ Crying	____ Deep
____ Angry	____ Normal	____ Ragged
____ Excited	____ Distinct	____ Clearing throat
____ Slow	____ Slurred	____ Deep breathing
____ Rapid	____ Nasal	____ Cracking voice
____ Soft	____ Stutter	____ Disguised

____ Loud ____ Lisp ____ Accent

____ Laughter ____ Raspy ____ Familiar

If the voice is familiar, who did it sound like?

Threat language.

____ Well spoken (educated) ____ Message read by the threat maker

____ Foul ____ Incoherent

____ Irrational ____ Taped

____ Other impressions

Background sounds.

____ Office machinery ____ PA system ____ Clear

____ Factory machinery ____ Music ____ Static

____ Street noises ____ House ____ Local

____ Crockery ____ Motor ____ Long distance

____ Voices ____ Animal noises ____ Other impressions

Your name:

Number of phone that call was received on:

Date and time call was received:

Other Information:

After a threat is received, report call immediately to police (dial **9-911** from a city phone or **911** from a pay phone) and your threat response coordinator.

The information below is to be completed by supervisors prior to issuing forms for use.

Threat Response Coordinator _____

Assembly Location _____

Attachment C

Risk Management Procedures for
Exposure to Anthrax and other Biological hazards

Any exposure to a biological hazard will be treated the same as an exposure or potential exposure to any Bloodborne Pathogen in chapter 12 of the Safety Policies and Procedures Manual. If an employee has a possible exposure to a biological hazard to include anthrax bacteria an exposure report must be filled out and forwarded to Risk Management by the supervisor.

The following procedures will be followed for all biological exposures. Adjustments may be made in the testing window for different biological organisms due to different incubation times. This procedure is based on the exposure specifically for Anthrax and the known incubation periods for symptoms to appear.

1. Centers for Disease Control guidelines will be followed in all cases and may be modified as needed. Current CDC recommendation is not to perform testing or nasal swabs except for persons exposed to a culture proven source of B. anthracis.

2. Testing will be done on employees on the positive report of bacterial presence on the tested material or:

3. If the result from testing of suspect material is prolonged over 14 days from the time of exposure, an evaluation process will start with the exposed employee thru the Occupational Health Clinic of St. Joseph Hospital. This evaluation process may include testing if the physician deems the procedure necessary and prudent for the wellbeing of the employee. This will be implemented on a case by case basis encompassing all factors surrounding the suspicious materials, the employee and any other relevant factors.

4. Positive test results on any suspicious material will trigger a complete and immediate evaluation of the employee as stated in section 3 above and any other suspect employees.

5. Any employee that exhibits symptoms of an exposure will be evaluated at the Occupational Health Clinic for any relationship to the suspect exposure and will be treated as prudent and necessary to standard practices.

Effective Date: 07/01/99
Revision Date: 10/15/01

VIOLENT THREAT RESPONSE

The Threat Response Team will investigate all threats or acts of violence in the workplace. Sensitive information will be shared with team members on a "need to know" basis only.

DEFINITIONS

Threat Response Coordinator – The person designated by the City Manager to act on information that requires an immediate response. The Building Proctor and an alternate at each site (see Attachment A) are designated by the City Manager as the Threat Response Coordinator to minimize response time. The name of the Threat Response Coordinator and the alternate will be posted in all areas affected and included on the Threat Response Worksheet.

Threat of Violence – An action or conversation that can be understood to convey the promise of an act of violence.

Physical Violence – Any willful act that is intended to produce harm or damage to any person or property.

Violence – Any intentional act that is physical, psychological or verbal that causes or is intended to cause annoyance, alarm, fear or harm to a person, place or thing.

Threat Response Team – Consists of the Human Resource Manager, Risk Manager, Assistant Police Chief for Operations, Assistant City Attorney designated in writing by the City Attorney, Public Information Officer and Deputy City Manager(see Attachment A). The purpose of the team is to develop action plans to deal with potential or actual incidents of violence in the workplace.

TRAINING

Training on this policy is the responsibility of safety coordinators. All employees with telephone duties shall be trained initially and at least annually there after. This training will include evacuation procedures for each area, the designated assembly areas, use of the threat information sheet, identification of the Threat Response Coordinator and assembly location.

THREAT RESPONSE

In the event a threat of violence is made against the City or one of its employees, the employee receiving the threat shall report the threat to his or her supervisor. The employee should describe:

- What kind of threat?
- Who made the threat?
- Where was the threat made?
- Were there any witnesses?

- How was the threat made?

The supervisor shall immediately notify Human Resources at 209-5063. Human Resources can be contacted after hours by dialing 361-3888 and asking the 911 operator to contact a Human Resources representative. The manager and/or supervisor shall provide all available information and documentation to Human Resources and advise if an employee or non-employee made the threat. Human Resources will notify members of the Threat Response Team as needed and have appropriate team members investigate the incident within 24 hours of the threat. Law enforcement agencies may be used. Team members will determine appropriate action to be taken. The manager/supervisor will report the action taken to the person threatened. The manager/supervisor will inform the employee of the City's Employee Assistance Program. Human Resources should be notified of any further threats or acts of violence.

VIOLENT INCIDENT RESPONSE

In the event an act of physical violence without a weapon occurs against the City or one of its employees, the employee shall call 911 immediately. (On City phones dial 911 on an outside line unless otherwise instructed at a specific facility.) The employee shall give all the information necessary to 911 and stay on the phone until help arrives. The employee shall report the incident to his or her supervisor immediately. The supervisor or manager will report the incident to the Threat Response Coordinator immediately. When an immanent threat exists the Threat Response Coordinator shall determine the appropriate response and convene an emergency meeting of the Threat Response Team as soon as possible. An investigation will begin as soon as possible after the incident. Law enforcement may be used in the investigation if appropriate. The Team will communicate appropriate information as needed to employees.

Some acts of violence involve the use of weapons including a knife, gun, club or other instrument to cause injury or death. The early recognition of persons possessing these weapons is essential. When an assault with a weapon is made, the employee shall call 911 immediately. (On City phones dial 911 on an outside line unless otherwise instructed at a specific facility.) The employee shall identify the location of the facility and describe the individual and the specific threat. If the employee must leave the telephone should be left off of the receiver. Employees should have escape plans to all entrances. Supervisors will determine routes and provide training on emergency procedures. Employees should move away from danger toward the nearest route. All employees should be alerted of the threat and directed to safety. Since each location is unique, the division manager(s) and employees will implement emergency alert procedures that will work at the individual location. Employees should identify a safe room with a door that locks from the inside and a telephone. Employees should put distance between themselves and the violator and, if all else fails, drop and lay as immobile as possible.

EXPLOSIVE DEVICES

If the threat of an explosive devise is received by telephone, the employee receiving the call should record the information requested on the Threat Response Worksheet (Attachment B) and notify their supervisor immediately.

The contents of an envelope or container should not be handled if a suspicious document is discovered. Equipment should be left as is (example, do not turn light on or off). All the material should be saved in as unaltered a condition as possible.

The supervisor will notify Police Dispatch (911) and the Threat Response Coordinator. The Threat Response Coordinator will decide whether to evacuate and search.

If an evacuation is ordered, supervisors will assure their area is evacuated. Non-electrical means will be used to notify employees of the evacuation as electric sparks or radio signals from communication equipment can detonate explosives in some circumstances.

Warning signs of suspicious packages and mail bombs include:

1. Restrictive markings
2. Excessive postage
3. Handwritten or poorly typed address
4. Titles but no names for addressee
5. Misspelling of common words
6. No return address
7. Oily stains or discoloration on envelope
8. Protruding wires or foil
9. Excessive marking tape
10. Rigid, lopsided or uneven envelope
11. Excessive weight
12. Visual distraction

EVACUATION

The following procedures will be followed if an evacuation is ordered:

1. Be orderly; don't panic.
2. Leave doors open to aid in ventilation if a bomb threat, close for all other circumstances.
3. Supervisor will designate an assembly area. This should be at least 200 yards from the nearest point of the building.
4. Don't lock any doors or drawers (except cash storage) before leaving. Be available to unlock any locked areas if required.
5. Survey the area for anything out of the ordinary before evacuating.
6. Report the location of any suspicious item to supervisors after reaching the assembly area. Supervisors will report this to the Threat Response Coordinator.
7. Threat Response Coordinator will establish a temporary command center at a predetermined location outside the evacuation area, to collect immediate information and coordinate responses.

8. Emergency personnel will sweep the building to make sure all employees and citizens are evacuated.
9. Supervisors must account for all employees and report to the command center.

Effective Date: 10/01/02
Revised Date: 06/11/10

PERSONAL PROTECTIVE EQUIPMENT

The City of Bryan (City) considers the safety and well being of its employees a priority. Reflecting this concern, the City will enforce nationally recognized standards concerning Personal Protective Equipment (PPE) to assure a safe working environment for employees of the City in controllable environments. This policy is based in part on the Occupational Safety and Health Administration (OSHA) standard 1910.132 titled Personal Protective Equipment. American National Standards Institute (ANSI) standards were also used to develop and guide this policy. These organizations, or other organizations with protection of the worker as a guiding principle, will be used to determine best operating practices in the implementation of this policy. If there is doubt regarding the safety of the worker, the decision will be in favor of protecting the worker first.
It should be noted that Fire, Police and Hazardous Material responders have additional special needs protective clothing that are not identified in the scope of this policy.

DEFINITION OF PPE

PPE is defined as any equipment designed to protect the employee from physical harm. PPE will protect the employee from chemical, radiological, radiant, respiratory, biological, physical or other hazards. PPE is designed to prevent injury or impairment in the function of any part of the body through absorption, inhalation, or physical contact. PPE may take many forms such as, but not limited to, protective clothing, shields, barriers or respiratory devices.

WORKPLACE HAZARD ASSESSMENTS

It is the joint responsibility of the City and the employee to assess the workplace and identify hazards. It is the City's responsibility to provide the PPE necessary to protect the employee from those hazards identified.

RESPONSIBILITIES

Risk Management

Risk Management is responsible for periodic review and updates of this policy and serves as a resource to answer questions or problems concerning this policy. Additionally, Risk Management and the Safety Team may assist in developing bid specifications for safety equipment and devices if requested.

Department Managers

Department Managers are responsible for ensuring adequate provisions in the preparation of their budgets relating to PPE and safety equipment. Department Managers may also assist in developing bid specifications for safety equipment and devices if requested. Department Managers are ultimately responsible for providing appropriate PPE

equipment and PPE training for all employees under their management and ensuring the use and availability of PPE when indicated in work environments.
Due to the high cost and personal nature of the PPE, a tracking system for all durable PPE must be used. The department manager or their designee will be responsible for the maintenance of the tracking sheet.
The tracking sheet will include the following information:

1) Name of the employee
2) Current date
3) Date of last PPE issued
4) Condition of PPE being turned in
5) Name brand/style of new PPE
6) Applicable ANSI or OSHA sections
7) Any other specifications required by the department manager

Each department or division is encouraged to develop a tracking sheet that works best for them.
A document has been attached to this policy to assist in the identification of PPE needs for specific positions. This document can be used for the initial issue of equipment or simply as a tool to determine the appropriate PPE required per task. It is not meant to be used as the tracking sheet. Follow the guidelines above for that purpose.

Supervisors
Supervisors are responsible for inspecting the job sites on daily basis to verify that employees are using the PPE properly. They have the authority to intervene when unsafe behavior is observed, correct hazardous conditions that have been observed or reported, and to direct employees to use additional PPE when conditions warrant.

Employees
Employees are responsible for understanding and complying with the safety rules, reporting any unsafe conditions to their supervisors immediately, and reporting any accidents, incidents or near misses immediately, regardless of who was at fault.

EMPLOYEE-OWNED PPE
Where employees provide their own protective equipment, the direct supervisor shall be responsible to ensure its adequacy, including proper maintenance, and sanitation of such equipment. A safety officer or specialist should be consulted if there are any questions about the PPE.

TRAINING
The City shall provide training in the proper use of PPE. Training will include, but not limited to: when PPE is necessary, what PPE is necessary, how to properly put on, take off, adjust and wear PPE and how to care for, maintain, determine useful life and properly dispose of the PPE.

TYPES OF PPE:
Although not meant to be an exhaustive review of PPE, this list shall comprise the current acceptable standards for each of the classes of PPE that the City recognizes. This policy is intended to be a more readable summary that includes all types of PPE.

Eye and face protection
OSHA publication 3077 outlines basic guidelines for the selection of PPE. Eye and face protection must be reasonably comfortable under the designated conditions. ANSI Z87.1-1989 is the guiding standard for this PPE. Eye and face protection can be divided into two categories:
Category I would provide protection from flying objects, dust, liquids, vapors or physical hazards. This category would include safety glasses with or without side shields, goggles, and face shields. Both the lens and the frames must satisfy ANSI standards for impact resistance.
Category II would provide protection from radiant hazards like laser rays, ultraviolet rays, or welding and cutting operations. This class would include UV rated sunglasses, and face shields with built in shaded lenses. This category often provides the same protection as the category I protection also. Category II PPE must restrict 99% of UV and laser rays. Welding operations must use a minimum protective shade 10 lens. Cutting or gas welding operations must use a minimum protective shade 5 lens.

Prescription safety glasses
The City of Bryan recognizes that many employees wear (non-safety) prescription glasses in areas and during activities that require Category I protection. Since removing the prescription glasses to put on safety glasses introduces a risk due to loss of vision some departments have developed programs to assist those employees in acquiring prescription safety glasses.
This policy outlines those procedures so that all departments using this program provide a consistent approach.
The selection of a provider is left up to the department as long as maximum purchasing limitations are not exceeded in a fiscal year. For this reason, it is important to coordinate these choices with the purchasing staff so that the city-wide expenditures can be monitored.
Eligibility requirements:

- Only full-time employees are eligible.
- Only “operational” employees as identified in the Safety Bucks spreadsheet are considered eligible.
- Employees that normally wear glasses to walk or drive are eligible.
- Employees needing glasses strictly for near vision are NOT eligible. Goggles and or face shields will be utilized for those employees.

The employee must bring a recent and valid prescription from the optometrist of their choice. That cost will be borne by the employee. The City will authorize up to $175 towards the purchase of the ANSI Z87.1 certified prescription glasses. The amount of the allowance may be increased by a simple majority approval of the safety committee. Although most employees should be able to purchase the glasses for this amount, some

employees may desire enhancements that increase the purchase price. They will be required to pay the provider the difference at the time of pickup.
If the City purchases your safety glasses you are required to wear them while on duty.

Foot protection
ANSI Z41-1999 is the standard for this PPE. The City has adopted Sections One and Five of the standard as minimums. Section One of the standard requires a minimum compression test of 2500 pounds and a minimum impact test of 75 pounds. Hazard assessments shall be conducted to determine other protective needs like puncture resistance as listed in Section Five.
Boot oils will greatly extend the life of the shoes and will be made available at the work site for safety shoe equipped employees. When possible and appropriate, repairs are encouraged before replacement.

Head Protection (Hard Hats)
ANSI Z89.1-1997 is the standard for this PPE. The standard includes Type I helmets (blows to the top of the head) and Type II helmets (blows to the top and sides of the head). The City recommends the use of Type I helmets for all applications. There are also designations within the types. Class G (general) helmets are proof tested at 2200 volts. Class C (conductive) helmets provide no electrical insulation. Class E (electrical) helmets are proof tested to 20,000 volts. Due to the work environments that employees are exposed to, the City requires Type I, class E helmets. Contrary to popular belief, hard hats do not have a predetermined service life. Hard hats should be removed from service when they show signs of wear like dents, cracks or penetrations. UV radiation or applied stickers will also cause weakness. A dull, chalky appearance or flaking indicates the end of the helmet's useful life.
The suspension webbing inside the helmet is the part that provides the most protection. Proper adjustment of the suspension maintains an impact compression zone. The suspensions with the rotary style adjustment allow employees to use the equipment properly regardless of hair length or cold weather gear. The City recommends this style of suspension. The City also recommends the selection of hard hats with a full brim completely encircling the helmet. The added brim improves deflection capability of the helmet.
Other accessories to the helmet may be specified by the department manager. They could include, but are not limited to, face shield adapters, hearing protection adapters, chin straps or extended sun shield brims.

Hearing Protection
OSHA 1910.95 titled Occupational Noise Exposure has information pertaining to hearing conservation programs and gives time vs. noise intensity curves for evaluating noise exposures. According to NIOSH A Practical Guide to Preventing Hearing Loss "not every person can wear every hearing protector. Due to individual differences in the shapes and sizes of heads, some people will be unable to wear some earmuffs." Because of this, the City will provide different styles of hearing protection for its employees.

Hearing protection devices are rated by Noise Reduction Ratings (NRR's). The devices are rated individually. NRR's range between 10 and 30 depending on the device. Higher NRR's will provide better protection. The City recommends use of the highest rated devices available in the particular style used. Person's in high exposure activities or with established hearing loss are strongly encouraged to use custom molded ear plugs for the highest level of protection.

Hand Protection

OSHA 1910.138 addresses hand protection. Like protective clothing, hand protection falls into several categories. Each of these categories can also have several additive specifications. Gloves come with specialized cuffs such as straight, pinked, rolled or gauntlet cuffs. They also come in different lengths such as wrist/forearm length, elbow length or shoulder length. The gloves and cuffs can be flock-lined, knit-lined, or jersey-lined. Stretchable gloves come powder-free or powder-added.

Chemically protective gloves are quite specialized. Depending on the specific chemical or biological hazard being protected from, the employee may need to use a Latex, Butyl, Neoprene, Nitrile, PVC, PVA®, Viton®, Silvershield®, or 4H. Each of these has specific breakthrough, degradation or permeation rates per chemical exposure.

In addition to all of these factors, Latex allergies and reactions have required entities to stock gloves made of materials other than latex. These allergies have been shown to be cumulative exposure hazards. In other words, the more that a person comes in contact with latex products, the higher the odds are that they will become latex allergic. Allergies can range anywhere from rashes to anaphylactic shock.

It is not within the scope of this policy to identify all possible hand protection requirements. The policy will identify general City requirements and recommendations for proper gloves in those categories.

Category I gloves are used to protect against cuts, abrasions, and weather to a certain extent. These gloves are characterized by being relatively thick, constructed of leather or cotton and having either straight or gauntlet cuffs. The cotton or knit gloves are generally used as liners for the outer layer gloves.

Category II gloves are similar to category one gloves in construction but are specifically designed to protect from heat. These gloves are usually heavy leather but may also be made of Nomex® materials or other specialized fire retardant materials.

Category III gloves protect employees from extreme low temperatures. The City does not have any applications for this type of hand protection.

Category IV gloves protect employees from cuts and slices related to repetitive knife usage. These gloves are primarily designed for food processing industries. The City does not have any applications for this type of hand protection.

Category V gloves are used for chemical protection. These gloves are very specific to the applications and should be selected based on the hazard assessment of the task.

Category VI gloves are most commonly used to protect against bloodborne and waterborne diseases. The City currently stocks two styles for this type of protection. Style one is a non-sterile, powder free latex glove with a thickness of approximately 8-9 mm. Style two is also a non-sterile, powder free latex glove with a thickness of approximately 15 mm. Style one is preferred by police officers and light duty

applications like front desk personnel. Style two is preferred by water/wastewater workers because of the extra tear and puncture resistance offered by the thicker glove.
Category VII gloves are used to protect personnel that work with live electrical circuits. These gloves are also protected by an outer leather style glove to increase the life cycle of the glove. Due to the nature of its use, these gloves are tested every 6 months for conductive resistance by a vendor. These rubber gloves come in three different classes defined by the voltage they are capable of resisting.

Respiratory Protection
Respiratory protection can be divided into two categories. Category I protection would cover workers in *acceptable Oxygen atmospheres*. Category II would cover workers in *Oxygen deficient atmospheres*. OSHA 1910.134 is the standard followed for respiratory protection.
The most basic type of **category I** respiratory protection is a particulate mask. The city currently stocks a 3M® 8511 model respirator which has given satisfactory service.
The next level of category one respiratory protection is a mask with replaceable filters. These filters can remove particulates to a much greater degree in addition to purifying the air of specific vapors and gases. These masks come in either full-face or half-face styles. The style selected depends on the application. These protective devices are very specific in their applications and the filters often have limited shelf lives. It is recommended that acquisition of these devices be done on a very limited basis and for a specific use in known atmospheres and concentrations.
Category II respirators are commonly called self contained breathing apparatus (SCBA). These protective devices are capable of providing 100% respiratory protection under any condition. Water Services employees and Fire Services employees are the primary users of this equipment. Pulmonary fitness testing and mask fit testing are required on an annual basis to qualify as a user. This protective equipment is replaced only infrequently. Because of the high cost and extended life spans of this equipment, they are frequently considered capital purchases. Excepting particulate filtration, this is the preferred method of respiratory protection for most applications.

Protective clothing
Protective clothing falls into several categories.
Category I should be worn if electrical contact is possible. The clothing is characterized by a 100% cotton construction. It contrasts from regular clothing by its resistance to melt to the skin if burnt.
Category II is similar in that it also protects from burns. Its primary users would be welders and metal cutters. The clothing is usually made of leather and generally consists of aprons, sleeves or jackets.
Category III also provides some burn protection as well as some chemical protection. Laboratory personnel are expected to use this PPE when conducting work involving flammable reagents or acids. The clothing can be made of Nomex ® and generally consists of aprons or lab coats. There are specific laundering requirements to be considered in the care of this PPE. Fire retardancy will be severely compromised if the clothing is laundered improperly.

Category IV clothing is required for anybody exposed to bloodborne pathogens or infectious agents. OSHA 1910.1030 is the standard for category four PPE. Category four clothing is not characterized by style but by the requirement that the clothing be laundered by the employer in a manner which would preclude transfer of infectious contaminants. Police, Fire, custodial and Water Service employees are specifically identified as persons in exposure positions.
Category V clothing serves the purpose of protecting the employee from the elements. This category includes high visibility (yellow) rain gear such as rain jackets, ponchos, pants, overcoats and boots. It is recommended that all rain boots include steel toe protection identified in ANSI Z41-1999. If rain gear is worn where electrical contact is possible then fire retardant raincoats are required. Fire retardancy is described in National Fire Protection Association standard NFPA 1977 (1998 edition currently).
Category VI refers to traffic visibility clothing. The City will follow the Texas Department of Transportation (TXDOT) standards.
Category VII has no official regulation or standard to quote from, but official City of Bryan uniforms serve several purposes. Crews working at any hour but especially late at night in response to emergency repairs often need to approach citizens or enter private property. Anything less than instantaneous recognition can have unpleasant consequences. This security is also felt by the employee who may be hesitant in making appropriate customer contacts in the discharge of their required duties.

Skin Protection:
This section covers products applied to the skin for various protective purposes. This policy will cover three hazard categories.
Category I products will protect the employee from ultraviolet radiation exposure. Many employees are required to work outside during the highest UV exposure periods of the day. A Sun Protection Factor (SPF) of 20 will be the minimum. SPF-45 may be required for certain people with high risk complexions. Complete UV blocking products may also be required in certain applications.
Category II products will protect the worker from vector agents, i.e. flies, mosquitoes, gnats. Unprotected workers will be especially unproductive when exposed to these insects. Application of these products will also help to minimize infectious agent transfers from the vectors. Every effort should be made to acquire products in this category that are natural, biodegradable and non-toxic to the employee. Other products may have comparable or improved repellent characteristics but are not environmentally friendly.
Category III products are designed to protect the workers from a host of contact hazards. The City currently uses a product called Dermashield™ which has acceptable protective characteristics from acids, insect bites and poisonous plants.

Attachment A:
Checklist of PPE Equipment (example)
Job Description _____
Name_____

Type of PPE	Required?	Initials
Eye and Face		
Cat. I	□	_____
Cat. II	□	_____
Other (list)_____	□	_____
Foot		
Section 1	□	_____
Section 1 & 5	□	_____
Other (list)_____	□	_____
Hearing		
Ear plugs	□	_____
Ear muffs	□	_____
Other (list)_____	□	_____
Hand		
Cat. I	□	_____
Cat. II	□	_____
Cat. III	□	_____
Cat. IV	□	_____
Cat. V	□	_____
Cat. VI	□	_____
Cat. VII	□	_____
Other (list) _____	□	_____
Respiratory		
Cat. I	□	_____
Cat. II	□	_____
Other (list)_____	□	_____
Clothing		
Cat. I	□	_____
Cat. II	□	_____
Cat. III	□	_____
Cat. IV	□	_____
Cat. V	□	_____
Cat. VI	□	_____
Cat. VII	□	_____
Other (list) _____	□	_____
Skin		
Cat. I	□	_____
Cat. II	□	_____
Cat. III	□	_____
Other (list)_____	□	_____

City of Bryan

Monthly Maintenance Checklist for
Cardiac Science Powerheart G3 Automated External Defibrillators
Initial boxes as items are checked off
Return completed form to Risk Management

Month	Step 1 Open Lid	Step 2 Status indicator should turn red	Step 3 Status indicator should turn back to green within 5 seconds	Step 4 Check expiration dates on pads	Step 5 Listen for voice prompts	Step 6 Close lid and confirm green status indicator	Print date	Print name
January								
February								
March								
April								
May								
June								
July								
August								
September								
October								
November								
December								

Daily Maintenance: Verify that the Status indicator is green.

Unit Serial Number:_____ Location:_____

City of Bryan

Annual Maintenance Checklist for
Cardiac Science Powerheart G3 Automated
External Defibrillators
Return completed form to Risk Management

Serial Number	Location	Date	Print name	Signature

Annual Maintenance; Part 1- Pads and Circuitry

1. Open the AED lid.
2. Remove the pads.
3. Close the lid.
4. Confirm that the **STATUS INDICATOR** turns red.
5. Open the lid and confirm that the **PAD** indicator is lit.
6. Reconnect the pads and close the lid.
7. Make sure the expiration date is visible through the clear window of the lid.
8. Check to make sure that the **STATUS INDICATOR** is **GREEN**.
9. Open the lid and confirm that no diagnostics indicators are lit.
10. Check the expiration dates of the pads; if expired, replace them.
11. Check the electrodes packaging integrity.
12. Close the lid.

Annual Maintenance; Part 2- Service Indicator (LED) and Circuitry

1. Immediately after opening the AED lid, press and hold the **SHOCK/CONTINUE** button and confirm that the **SERVICE** LED is lit.
2. Release the **SHOCK/CONTINUE** button.
3. Close the lid.
4. Verify the **STATUS INDICATOR** remains red.
5. Open the lid and confirm that no diagnostics indicators are lit.
6. Close the lid.
7. Verify that the status indicator turns green.

Annual Maintenance; Part 3- Integrity of the case

Examine the molded case of the AED for any visible signs of stress.

Sample laminated card to be included in every AED:

If this AED has been used on a patient:
Contact dispatch at 361-3888
Or Risk Management at 209-5055
Request a replacement AED and then
Fill out the “AED use” form inside the case.
For technical help, call 1-888-466-8686

The following form must be completed on all uses of the AEDs. Return to EMS Chief.

Date: _____ Incident #: _____
Patient Information:

Name: _____

Address: _____

_____

Age: _____ Gender: Male □ Female □

Site of Incident: _____

_____

Witnessed Arrest:	Yes:	□	No	□
Breathing upon arrival of designated responders:	Yes:	□	No	□
Pulse upon arrival of designated responders:	Yes:	□	No	□
Bystander CPR:	Yes:	□	No	□
Cardiac Arrest After Arrival:	Yes:	□	No	□
Number of Defibrillations:	_____			
Efforts terminated in the field?	Yes:	□	No	□
Any Complication?	Yes:	□	No	□
Comments:	_____			
	_____			
	_____			

Additional Comments: _____

_____

_____

_____

_____

User's Name: _____

User's Signature: _____

Effective Date: 03/23/06
Revised Date: 10/08/09

Automated External Defibrillators (AED)

AED Distribution
The City of Bryan is dedicated to providing AEDs throughout the City. They will be located in public buildings, police vehicles and at various staffed work sites as designated by the Risk Management Department. A list of devices and their designated sites will be maintained by Risk Management.
Designated site users will be responsible for daily and monthly maintenance checks of the AEDs. Fire Services will be responsible for annual maintenance checks and data downloading of the AEDs. Documentation of maintenance checks shall be coordinated with Risk Management. The "AED Monthly checklist" and the "AED Annual checklist" are attachments A and B respectively to this document.

AED Oversight Physician
The City of Bryan has a contract, through Fire Services, for the services of an AED Oversight physician. The EMS chief will be responsible for coordinating with this physician for all matters pertaining to the use of AEDs.
The oversight physician is responsible for:

- Overview of the AED training
- Overview of the maintenance program
- Defining the standards of patient care and utilization of the AEDs.
- Reviewing the response documentation and rescue data for all uses of the AEDs

Responder Training
Any employee that is expected to provide emergency care to a patient will be trained in First Aid, CPR and AED usage. Fire Department personnel not trained to EMT-Intermediate or EMT-Paramedic, must be trained in the operation of the AED. It is the goal of the City of Bryan to train and maintain certification on all of the Police Department and at least 75% of all Public Works and Electric Utility employees. All other sections, divisions or departments must train enough employees to provide adequate coverage of their work areas. At least one trained responder must always be available at each job site during business hours. Risk Management will coordinate training and maintain records for all responder's in this program. The records must be available for review by the oversight physician.

Incident Response
If an AED is used in an emergency response it will be collected by Fire Services and the unit's memory chip will be downloaded. Fire Services will also maintain a "reserve" AED, to be distributed when an AED is used or goes out-of-service for any reason.

As soon after the incident as possible:

- Contact Police dispatch or Risk Management (See Attachment C)
- Ask them to notify the Battalion Chief with Fire Services. Tell them that you need to exchange the AED for a fresh unit located at Central Fire Station.
- Complete an AED use report and forward it to the oversight physician or EMS chief. (See Attachment D)

These steps should be performed by Fire Services:

- Replace the electrode pads
- Replace the pocket mask or other supplies used
- Check expiration date on the electrode
- Check the battery life
- Close the lid and view the status indicator for GREEN indicator
- Retrieve rescue data from communication port and forward to oversight physician

Effective Date: 07/09/10
Revision Date: 00/00/00

INDOOR AIR QUALITY

This safety policy on indoor air quality is intended to educate employees on recognition of the potential contaminants as well as the dangers of poor indoor air quality. Furthermore, this policy should give employees clear expectation on how to respond when poor indoor air quality is suspected.
Since many people have different levels of sensitivity to gases and airborne particles in the environment it is important to assess air quality issues as if everybody in the area were affected. Notify your supervisor and advise them if you suspect that indoor air quality is adversely affecting your health. Most assessments can be made without the assistance of professionals but whenever an issue requires outside assistance Risk Management must be notified.
This policy is intended to address issues of breathable air quality. It is not intended to address temperature or circulation issues. Those issues should be addressed through the normal work order channels with the Facility Services Division.

DEFINITIONS
IAQ – Indoor Air Quality

Air – A combination of atmospheric gases necessary for the survival of humans. It consists of approximately 78% Nitrogen, 21% Oxygen and 1% other gases and water vapor.

Radon – a naturally occurring, colorless, odorless, radioactive gas formed in the soil. It tends to enter through floors or walls that are in contact with the ground. Continued exposure to radon can lead to lung cancer.

Tobacco Smoke (environmental) – A complex mixture of over 4,000 compounds found in the smoke that comes from the burning end of a cigarette, pipe or cigar or exhaled by a smoker. Tobacco smoke can cause many respiratory tract complications up to and including cancer.

Biological Contaminants – include bacteria, molds, mildews, animal dander and cat saliva, house dust mites, cockroaches and pollen. A person exposed to materials in this group is most likely to experience allergic reactions such as sneezing and coughing.

Carbon Monoxide – Abbreviated as "CO", this colorless, odorless gas is a combustion byproduct. It is usually found where vents or flues are improperly designed or leaky. CO can also accumulate anywhere with doors near roads or parked running vehicles. Since CO interferes with the body's ability to carry oxygen in the blood, the initial signs are usually headaches or dizziness. Loss of consciousness and death soon follow.

Nitrogen Dioxide – NO_2 is also a combustion byproduct, but it has a reddish-brown color and is irritating to the eyes, nose and throat. NO_2 has been linked to several long term lung related problems.

Respirable particles – Particles in themselves are not generally considered to be dangerous to our health since the body simply ejects them with mucous or absorb them into the body. Unfortunately, some respirable particles can also carry in contaminants like radon which can cause cancer.

Volatile Organic Compounds – VOCs are chemicals found in paints and lacquers, paint strippers, cleaning supplies, varnishes and waxes, pesticides, building materials and furnishings, office equipment, moth repellents, air fresheners and dry-cleaned clothing. The VOCs are released into the air when these products are used. Exposure to VOCs can be irritating to the skin, the respiratory system and the nervous system. Some VOCs can cause cancer.

Asbestos – In most circumstances, asbestos is not considered an air contaminant. However, when disturbed, the fibers can become airborne and breathing them can lead to lung cancer, mesothelioma or asbestosis. Professionals must be contracted when disturbing any friable (could become airborne) asbestos product.

Lead – Lead can also be introduced into the body as a respirable particle. High intake levels can lead to developmental problems in children. It is using made airborne while removing old lead paint.

RESPONSIBILITIES

Division Managers

Division Managers are responsible for ensuring that employees have a safe, breathable work environment. Managers should regularly evaluate the work environment to make sure that safe conditions are maintained. They may be required to expend funds for cleanup, rearrange work schedules, temporarily close buildings or hire contractors for remediation purposes. They should work closely with experts in the IAQ field to make sure that sites are properly cleaned and mitigation measures are taken to prevent recurring IAQ problems. They should also work closely with the Facility Services Manager to minimize employee discomfort, or disruption in operations, during scheduled maintenance.

Risk Management

Risk Management will make every effort to address the concerns of the employee, including but not limited to, recommending transfer to another work area until the IAQ issue can be resolved.

Employees

Employees should follow the direction of their managers to prevent and mitigate any IAQ issues they encounter. It is also their responsibility to report any suspected IAQ issues to their managers. Employees have the right to request investigations concerning their work environment and should participate in any surveys used to evaluate IAQ in their area.

Effective Date: 07/09/10
Revision Date: 00/00/00

Hazardous Waste Operations and Emergency Response (HAZWOPER)

City personnel will be responsible for cleanup any time that a hazardous material is released from a piece of City-owned equipment or from a City-run operation in such a way as to be detrimental to the environment or the organisms within it. City personnel are also often called upon to clean up spills in public right-of ways when the responsible party is not known or is unable to take action.
This policy defines the appropriate actions for common scenarios and the different levels of training recommended for responding appropriately.
In reference to the requirements of 29CFR 1910.120, this policy covers emergency response operations for releases of, or substantial threats of releases of, hazardous substances without regard to the location of the hazard.

DEFINITIONS

Disposed/disposal – The transport and final disposition of materials believed to be detrimental to human health or the environment.

Hazardous material – Any material that can cause immediate or long term damage to the environment or organisms within it.

HAZWOPER trained – 40 hours in the classroom in accordance with 29CFR 1910.120 and 8 hours of annual "refresher" training

Hazard Awareness trained – 24 hours in the classroom in accordance with 29CFR1910.120

Refresher course – 8 hours in the classroom in accordance with 29CFR1910.120

Pulmonary Function Test (**PFT) –**The measurement of a predicted airflow from the lungs of an individual under clinical conditions.

Mask Fit Test (**MFT) –** This test is designed to verify that the employee has a properly fitting mask and that there are no leaks in the mask due to size, facial structure or facial hair.

Risk Management Plan (RMP) – a program developed by EPA to mitigate and respond to airborne chemical releases.

RESPONDERS

The Fire Department will always be considered the first responders to any hazardous material spill. Their primary concern will be to mitigate any immediate hazards to life or property. Once any immediate hazards are mitigated or if there were no immediate hazards to begin with, then other City personnel may be called upon to clean up the hazardous material(s).

The Code of Federal Regulations requires that any person involved in the cleanup of hazardous materials must be properly trained and qualified to do the work. The full class for HAZWOPER is 24 hours and interested persons must also pass a PFT and MFT before continuing. It is recommended that these same persons carry Commercial Driver's Licenses with Hazardous Materials endorsements so they can legally transport the cleaned up material to a temporary storage facility.

Risk Management will be responsible for maintaining the list of (non-fire) personnel that have satisfied all of the requirements to participate in cleanups. Risk Management will also be responsible for acquiring or conducting the required training and keeping the records.

The Divisions from which the employees come will be responsible for managing the annual PFTs and MFTs. Traditionally this has been the responsibility of the Streets and Drainage crew but Water Services also has many people with this or similar training due to the RMP. Divisions will be responsible for PFT/MFT/CDL requirements.

FACILITIES

Water Production and Wastewater Treatment are designated as industrial facilities with chlorine and sulfur dioxide hazards. Staff in those facilities have specialized training in responding to those specific hazards and thus are considered the first responders. Fire Services will respond in a support capacity to a Cl_2/SO_2 incident at these facilities and only step in should the local resources be exhausted.
Cleanup and disposal of hazardous material spills at other City facilities will be the responsibility of the division associated with that property. However, HAZWOPER trained staff or Environmental Compliance Officers may be enlisted to assist the division in the response.

RESOURCES

Another level of training related to hazardous wastes is called Hazard Awareness. As compared to HAZWOPER, it does not prepare the employee for cleanup operations. Hazard Awareness training is a good class for supervisors and managers to take since it gives them the knowledge necessary to recognize hazards and protect their employees without requiring them to actively participate in cleanups.

DISPOSAL

Proper disposal of hazardous materials depends upon the type of materials. Materials must be characterized before they can be properly disposed of. Either Risk Management or Environmental Compliance Officers can assist in this work. Collected hazardous materials must be disposed of in a timely manner. Disposal of hazardous materials from public right of ways where the responsible party cannot be located will be borne by the Streets and Drainage Department. Disposal of hazardous materials from City facilities associated with a division will be paid for by that division.